

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
IN re PATENT APPLICATION OF : Akihiro KURODA, et al
Appln. No. 10/549,704 : GROUP ART UNIT: 1619
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EXAMINER: Gulledge, Brian M
FOR: Cosmetic Preparation

* * *
DECLARATION

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SIR:

I, Yuko IGARASHI, a Japanese Patent Attorney of Iwamiya & Associates having an office at NIPPON BUNJO-JUTAKU-KAIKAN BLDG, 3-6, KANDA OGAWA-MACHI, CHIYODA-KU, TOKYO, JAPAN, certify and declare:

That I am fully conversant both with the Japanese and English languages;

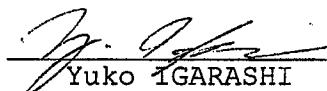
That I have carefully compared a certified copy of the Japanese Patent Application No. 2003-074978 in the Japanese language with an English translation thereof, a copy of said English translation being attached hereto;

That the translation is, to the best my knowledge and belief, an accurate translation from the original into the English language; and

That all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both under 18 USC 1001, and that such false statements may jeopardize the validity of the application or any patent issuing thereon.

DATE: May 25, 2009

BY:


Yuko IGARASHI

JAPAN PATENT OFFICE

This is to certify that the annexed is a true copy of
the following application as filed with this Office.

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Application Number: Patent Application 2003-074978
[ST.10/C]: [JP2003-074978]

Applicant(s): KANEBO LTD.
 Shin-Etsu Chemical Co., Ltd.

April 19, 2004

Commissioner,
Japan Patent Office Yasuo IMAI

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[Name of Item] Abstract 1
[Necessity of Proof] Necessary

[Document Name] Specification

[Title of Invention] Cosmetic

[Scope of claim for Patent]

[Claim 1] A cosmetic, characterized in that the cosmetic comprises a compound having a structure of the following (1) and/or a structure (2), and methyltrimethicone having a structure of the following (3).

{(CH₃)₃SiO}₄Si (1)

{(CH₃)₃SiO}₂Si(CH₃)OSi(CH₃)₂OSi(CH₃)₃ (2)

{(CH₃)₃SiO}₃SiCH₃ (3)

[Claim 2] The cosmetic according to claim 1, characterized in that a ratio of a content of the aforesaid compound(s) (1) and/or (2) and a content of methyltrimethicone is respectively in a range of from 5:95 to 90:10.

[Claim 3] The cosmetic according to claim 1 or 2, characterized in that a total content of the aforesaid compound(s) (1) and/or (2) and methyltrimethicone is in a range of from 0.5 to 60 mass% relative to a total mass of the cosmetic.

[Claim 4] The cosmetic according to any of the claims 1 to 3, characterized in that the cosmetic further comprises ethyl alcohol.

[Claim 5] The cosmetic according to any one of claims 1 to 4, characterized in that the cosmetic further comprises at least one of isododecane, isodecane, and isohexadecane.

[Claim 6] The cosmetic according to any one of claims 1 to 5, characterized in that the cosmetic further comprises at least one of silicone resins, silicone-modified organic thickeners, and fluorine-modified silicone resins.

[Claim 7] The cosmetic according to any one of claims 1 to 6, characterized in that the cosmetic further comprises at least one of branched silicone type polyglyceryl- modified silicones, branched silicone type polyether- modified silicones, alkyl/polyether co- modified silicones, polyether- modified silicones, and crosslinked type polyether-modified silicones.

[Detailed description of the invention]

[0001]

[Field of the invention]

The present invention relates to a cosmetic comprising volatile silicones which are excellently safe and have volatility appropriate to properties of a cosmetic or an environment at a time of use of the cosmetic.

Specifically, the present invention relates to a cosmetic comprising volatile silicones which are excellently safe, have appropriate volatility and oil-solubility, and are excellent in stability with time and feel to the touch.

[0002]

[Prior art]

Conventionally, it is known that methyltrimethicone has an excellent property as a volatile solvent (Patent Document 1). Meanwhile, it is also known that tetramethicone having a structure of $\{(\text{CH}_3)_3\text{SiO}\}_4\text{Si}$ has been incorporated in cosmetics (Patent Documents 2-4).

[0003]

[Patent document 1]

EP 1213006

[Patent document 2]

WO 03016380

[Patent document 3]

WO 02096980

[Patent document 4]

EP 0789061

[0004]

[Problems to be solved by the invention]

However, tetramethicone described in the aforesaid Patent Documents 2-4 is described as a kind of various kinds of volatile silicones and as an equivalent of a low-molecular weight linear silicones which are known to have a safety problem. It is therefore apparent that no consideration is given to its properties and safety. Moreover, it is not described at all that tetramethicone is excellently safety as a raw material for cosmetics, has an oil-solubility appropriate as a raw material for cosmetics, and are excellent in stability and feel to the touch. Further, there is no description at all about a merit of a combinatory use of methyltrimethicone and tetramethicone among there various components.

[0005]

[Means to solve the problems]

The inventors have found that a cosmetic comprising volatile silicones can be obtained by incorporating a combination of the following compounds (1) and/or (2) and methyltrimethicone (3) shown below, which volatile silicones have excellent safety, appropriate volatility and oil-solubility, and are excellent in stability with time and feel to the touch.

$\{(\text{CH}_3)_3\text{SiO}\}_4\text{Si}$ (1)

$\{(\text{CH}_3)_3\text{SiO}\}_2\text{Si}(\text{CH}_3)\text{OSi}(\text{CH}_3)_2\text{OSi}(\text{CH}_3)_3$ (2)

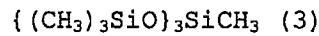
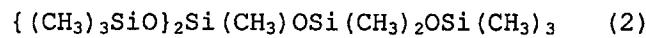
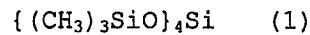
$\{(\text{CH}_3)_3\text{SiO}\}_3\text{SiCH}_3$ (3)

[0006]

These compounds (1) and (2) have no problem of safety. However, they have high boiling points to have a problem of low volatility as a solvent for cosmetics and a problem of greasiness when they are used alone. It has been found, by concomitantly use methyltrimethicone having high volatility and the same branched structure as the compounds (1) and (2), that the volatility of these compounds can be efficiently improved, and that a cosmetic can be obtained which is excellent in sensory feel with reduced greasiness and in stability.

[0007]

The present invention is thus a cosmetic which is characterized in that it comprises a compound having the following structure (1) and/or a compound having the following structure (2), and methyltrimethicone having the following structure (3).



[0008]

The second aspect of the present invention is the aforesaid cosmetic, characterized in that a ratio of a content of the aforesaid compound(s) (1) and/or (2) and a content of methyltrimethicone is respectively in a range of from 5:95 to 90:10.

[0009]

The third aspect of the present invention is the aforesaid cosmetic, characterized in that a total content of the aforesaid compound(s) (1) and/or (2) and methyltrimethicone is

in a range of from 0.5 to 60 mass% relative to a total mass of the cosmetic.

[0010]

The fourth aspect of the present invention is the aforesaid cosmetic, characterized in that the cosmetic further comprises ethyl alcohol.

[0011]

The fifth aspect of the present invention is the aforesaid cosmetic, characterized in that the cosmetic further comprises at least one of isododecane, isodecane, and isohexadecane.

[0012]

The sixth aspect of the present invention is the aforesaid cosmetic, characterized in that the cosmetic further comprises at least one of silicone resins, silicone-modified organic thickeners, and fluorine-modified silicone resins.

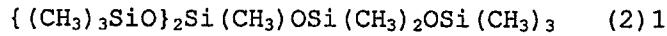
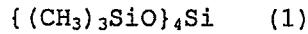
[0013]

The seventh aspect of the present invention is the aforesaid cosmetic, characterized in that the cosmetic further comprises at least one of branched silicone type polyglyceryl- modified silicones, branched silicone type polyether- modified silicones, alkyl/polyether co- modified silicones, polyether- modified silicones, crosslinked type polyether-modified silicones.

[0014]

[Embodiment of the present invention]

In the cosmetic of the present invention, the compound having the following structure (1) and/or (2), and methyltrimethicone having the following structure (3) are incorporated.



{(CH₃)₃SiO}₃SiCH₃ (3)

[0015]

As a method of preparing the aforesaid compound (1) [chemical name: tetrakis(trimethylsiloxy)silane, hereinafter referred to as volatile silicone (1)], a known method can be mentioned. For example, it can be prepared by co-hydrolyzing tetrachlorosilane and trimethylchlorosilane. A molar ratio in the co-hydrolysis is at least four moles of trimethylchlorosilane per tetrachlorosilane.

[0016]

Volatile silicone (1) can be prepared also by hydrolyzing hexamethyldisiloxane and tetraalkoxysilane in the presence of an acid catalyst. As the tetraalkoxysilane, tetramethoxysilane, tetraethoxysilane, tetrapropoxysilane, and tetrabutoxysilane can be mentioned, among which tetramethoxysilane is preferred. Examples of the acid catalyst include sulfuric acid, methanesulfonic acid, trifluoromethanesulfonic acid, and an ion exchange resin. Preferably, the reaction is performed using an alcoholic compound as a solvent such as methanol, ethanol, and isopropyl alcohol. Concerning a molar ratio, at least two moles of hexamethyldisiloxane per tetraalkoxysilane is required.

[0017]

A specific synthesis example of volatile silicone (1) is described below.

1. In a reactor, 152 g of tetramethoxysilane, 432 g of hexamethyldisiloxane, and 88 g of methanol are placed.
2. The reactor is cooled with ice, to which 12 g of concentrated sulfuric acid is added and the contents of the reactor are stirred.

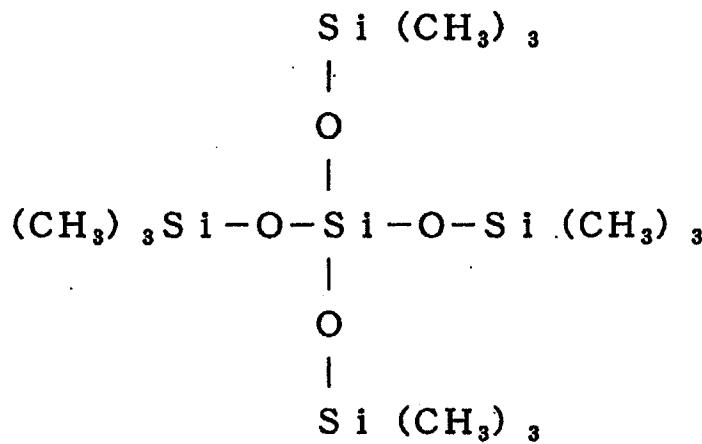
3. A mixture of 43.2 g of water and 43.2 g of methanol is added dropwise and hydrolysis is effected.

4. After the addition is completed, the hydrolysis is performed for 30 minutes and then the reaction mixture is washed with water, followed by removing the catalyst and methanol.

5. Anhydrous sodium sulfate is added. After drying, distillation is performed, and volatile silicone (1) of the chemical structure 1 shown below is obtained. A yield and properties are as shown below.

[0018]

[Chemical formula 1]



[0019]

Boiling point; 74-74.5°C/4mmHg

Amount obtained; 265g

Yield; 69%

[Properties]

Appearance; colorless and transparent liquid

Viscosity (25°C); 3.1mm²/s

Specific gravity (25°C); 0.864

Refractive index (25°C); 1.387

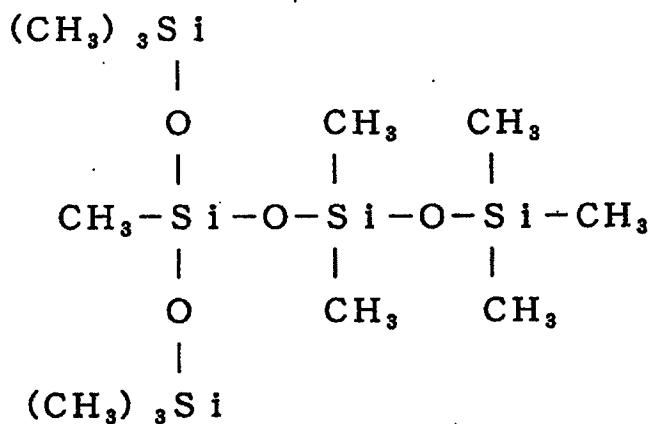
Freezing point; -70 °C or lower

[0020]

The compound having the aforesaid structure (2) [hereinafter referred to as volatile silicone (2)] can be prepared by hydrolyzing 1 mol of $(\text{CH}_3)_3\text{SiOSiH}(\text{CH}_3)\text{OSi}(\text{CH}_3)_3$ and 1 mol of $(\text{CH}_3)_3\text{SiOSi}(\text{CH}_3)_2\text{H}$ in the presence of an acid catalyst. Then, purification by distillation is performed and the intended volatile silicone (2) of the following chemical formula 2 is obtained.

[0021]

[Chemical formula 2]



[0022]

In the present invention, the aforesaid volatile silicones (1), (2) having a purity of 97 mass% or higher, more preferably, 99 mass% or higher, by purification is preferably used. If there are many impurities, the skin irritation or stinging stimulus may be caused.

[0023]

Methyltrimethicone used in the present invention is a volatile silicone represented by the chemical formula $\{(CH_3)_3SiO\}_3SiCH_3$, which has a freezing point of -82.8 °C and a boiling point of 190 °C. As a preparation method of methyltrimethicone, a known method can be mentioned. For example, it can be prepared by co-hydrolyzing methytrichlorosilane and trimethylchlorosilane.

Concerning a molar ratio, at least three moles of trimethylchlorosilane per tetrachlorosilane is required.

Methyltrimethicone can be prepared also by hydrolyzing hexamethyldisiloxane and methytrialkoxysilane in the presence of an acid catalyst. Examples of the methytrialkoxysilane are methyltrimethoxysilane, methyltriethoxysilane, methyltripropoxysilane, and methyltributoxysilane, among which methyltrimethoxysilane is preferred. Examples of the acid catalyst include sulfuric acid, methanesulfonic acid, trifluoromethanesulfonic acid, and an ion exchange resin. The reaction is performed using an alcoholic compound as a solvent such as methanol, ethanol, and isopropyl alcohol. Concerning a molar ratio, at least 1.5 moles of hexamethyldisiloxane per methyltrialkoxysilane is required. In addition, methyltrimethicone can be obtained by a reaction of eliminating XY between $(CH_3)_3SiOSi(X)CH_3Si(CH_3)_3$ and CH_3SiY , wherein X and Y are groups selected from the group consisting of hydrogen atoms, chlorine atoms, and alkoxy groups.

[0024]

Preferably, methyltrimethicone purified by distillation or the like is used. A part of the compounds described in the aforesaid patent documents often causes a kind of stimulus of the skin sensation called stinging. If the purity is low,

stinging may occur. In the present invention, methyltrimethicone having a purity of at least 99.5 mass%, more preferably, at least 99.9 mass%, is used.

[0025]

In the present invention, a ratio of a total content of the aforesaid volatile silicones (1) and (2) to a content of methyltrimethicone preferably ranges from 5:95 to 90:10. In this range, volatility can be controlled and oiliness can be reduced, and a cosmetic having excellent stability can be obtained. In the present cosmetic, a total content of the aforesaid volatile silicone(s) (1) and/or (2) and methyltrimethicone preferably ranges from 0.1 to 90 mass%, more preferably from 0.5 to 60 mass% based on a total mass of the cosmetic. In this range, a cosmetic can be obtained of which property of the volatile solvent is appreciated by a user. Further, one of the characteristics of the aforesaid volatile silicones (1), (2) and methyltrimethicone is that they cause significantly reduced dry feel(feeling of dryness), which dry feel is peculiar to conventionally used volatile silicones, to be useful to improve safety at the time of use.

[0026]

In the present cosmetic, various volatile solvents can be used with the aforesaid volatile silicones (1), (2) and methyltrimethicone. The aforesaid volatile silicones (1), (2) have a little lower volatility than decamethylcyclopentasiloxane, which is widely used in cosmetics, so that a combinatory use with a volatile solvent having lower boiling point has advantages of providing a cosmetic with refreshing feel, no greasiness, and improved feel at the time of application. For example, a combination with a lower alcohol

such as ethanol and isopropanol is preferred. Particularly, ethanol can give the skin refreshing feel by forming an azeotrope to increase volatilization rate. Meanwhile, a combination with at least one selected from the group consisting of isododecane, isodecane, isohexadecane, isoparaffin, volatile linear silicone, and terpene is preferred. Among these, each isododecane, isodecane, and isohexadecane evaporates fast and a combination with the aforesaid volatile silicones enables one to make a cosmetic which continues evaporating. It should be noted that each isododecane, isodecane, and isohexadecane irritates the skin when they seal the skin and, therefore, it is preferred to devise a formulation to prevent such sealing. It is preferred that the aforesaid volatile solvent is mixed with the aforesaid volatile silicones used in the present invention in a mass ratio of from 10:90 to 90:10.

[0027]

In the present cosmetic, it is preferred to use the aforesaid volatile silicones in combination with a silicone material such as silicone resins, silicone-modified organic thickeners, fluorine-modified silicone resins, polyamide-modified silicone, acrylated silicone, alkyl/acrylic-comodified silicone, silicone-modified pullulan, urethane-modified silicone, and alkyl-modified silicone. Conventionally, these silicone materials were used by dissolving in a dimethylpolysiloxane having a low viscosity or a cyclic silicone. They can be dissolved in the aforesaid volatile silicones of the present invention at a higher concentration which allows one to reduce an amount of carry over components, and accordingly freedom of formulation is increased. In the

present invention, silicone resins, silicone-modified organic thickeners, fluorine-modified silicone resins, which have superior miscibility with the aforesaid volatile silicones (1), (2) and methyltrimethicone, are preferably used. These resin components are used preferably in an amount of from 0.3 to 20 mass % based on a total mass of a cosmetic. In the range, a cosmetic having a good durability can be prepared by making use of qualities of the silicone resin.

[0028]

The present cosmetic may further comprise at least one of branched silicone type polyglyceryl-modified silicones, branched silicone type polyether-modified silicones, alkyl/polyether-co-modified silicones, polyether-modified silicones, polyglyceryl-modified crosslinked silicones, sugar-modified silicones and glyceryl-modified silicones.

Particularly, at least one of branched silicone type polyglyceryl-modified silicones, branched silicone type polyether-modified silicones, alkyl/polyether-co-modified silicones, polyether-modified silicones, and polyglyceryl-modified crosslinked silicones is preferably incorporated. These components have excellent miscibility with the aforesaid volatile silicones, to be useful to form a stable emulsion. These components are preferably used in an amount of from 0.05 to 20 mass%, more preferably from 0.1 to 10 mass%, relative to a total mass of the cosmetic.

[0029]

In the cosmetic of the present invention, a variety of components that are commonly used in cosmetics can be blended in addition to the aforementioned components, for example, UV-ray protectives, unctuous agents, antiseptics, perfumes,

humectants, salts, solvents, antioxidants, chelating agents, neutralizers, pH regulators, insect repellants, and bioactive components.

[0030]

As the pigment, any pigments commonly used in cosmetics may be used, regardless of the shape (spherical, rod-like, acicular, tubular, irregular, scaly or spindle forms), particle size (size of fume, fine particles or pigment grade), and particle structure (porous and non-porous). Examples of the pigments include inorganic powder, organic powder, surface active metal salt powder, coloring pigments, pearl pigments, metallic powder pigments, and natural colors. Examples of the inorganic powder include titanium oxide, zirconium oxide, pigment grade zinc oxide, cerium oxide, magnesium oxide, barium sulfate, calcium sulfate, magnesium sulfate, calcium carbonate, magnesium carbonate, talc, mica, kaolin, cericite, muscovite, synthetic mica, phlogopite, lepidolite, biotite, lithia mica, silicic acid, silicic anhydride, aluminum silicate, magnesium silicate, aluminum magnesium silicate, calcium silicate, barium silicate, strontium silicate, metal salts of tungstenic acid, hydroxyapatite, vermiculite, higilite, bentonite, montmorillonite, hecolitre, zeolite, ceramics powder, dibasic calcium phosphate, alumina, aluminum hydroxide, boron nitride, and silica. Examples of the organic powder such as organic powder such as polyamide powder, polyester powder, polyethylene powder, polypropylene powder, polystyrene powder, polyurethane powder, benzoguanamine powder, polymethylbenzoguanamine powder, polytetrafluoroethylene powder, polymethylmethacrylate powder, cellulose powder, silk powder, nylon powder such as Nylon 12 and Nylon 6, silicone powder, silicone gum powder, silicone

elastomer spherical powder, polymethylsilsesquioxane spherical powder, polyalkylsilsesquioxane powder, styrene/acrylic acid copolymer, divinylbenzene/styrene copolymer, vinyl resin, urea resin, phenol resin, fluororesin, silicone resin, acrylic resin, melamine resin, epoxy resin, polycarbonate resin, microcrystalline fiber powder, starch powder, and lauroyl lysine.

[0031]

Examples of the surface active metal salt powders (metal soaps) include zinc stearate, aluminum stearate, calcium stearate, magnesium stearate, zinc myristate, magnesium myristate, zinc cetyl phosphate, calcium cetyl phosphate, and zinc/sodium cetyl phosphate. Examples of the coloring pigments include inorganic red pigments such as iron oxide, iron hydroxide, and iron titanate, inorganic brown pigments such as γ -iron oxide; inorganic yellow pigments such as iron oxide yellow and loess; inorganic black pigments such as iron oxide black, and carbon black, inorganic violet pigments such as manganese violet and cobalt violet, inorganic green pigments such as chromium hydroxide, chromium oxide, cobalt oxide, and cobalt titanate, inorganic blue pigments such as Prussian blue and ultramarine blue, lakes of tar pigments, lakes of natural dyes, and synthetic resin powder complexes thereof. Examples of the pearl pigments include titanium oxide-coated mica, titanium oxide-coated mica, bismuth oxychloride, titanium oxide-coated bismuth oxychloride, titanium oxide-coated talc, fish scales, and titanium oxide-coated colored mica. Examples of the metal powder pigments include aluminum powder, copper powder, and stainless powder. Examples of tar pigments include Red No. 3, Red No. 104, Red No. 106, Red No. 201, Red No. 202, Red No. 204,

Red No. 205, Red No. 220, Red No. 226, Red No. 227, Red No. 228, Red No. 230, Red No. 401, Red No. 505, Yellow No. 4, Yellow No. 5, Yellow No. 202, Yellow No. 203, Yellow No. 204, Yellow No. 401, Blue No. 1, Blue No. 2, Blue No. 201, Blue No. 404, Green No. 3, Green No. 201, Green No. 204, Green No. 205, Orange No. 201, Orange No. 203, Orange No. 204, Orange No. 206, and Orange No. 207; and natural pigments such as carminic acid, laccaic acid, carthamin, brazilin, and crocin.

[0032]

These pigments are preferably surface-treated by a conventional method, e.g., treatment with a fluorine compound, preferably perfluoroalkylphosphate, perfluoroalkylsilane, perfluoropolyether, fluorosilicone, and fluorinated silicone resin, treatment with silicone, e.g., methylhydrogenpolysiloxane, dimethylpolysiloxane, or vapor phase treatment with tetramethyltetrahydrogen cyclotetrasiloxane, pendant treatments, i.e., addition of an alkyl chain after vapor phase treatment with silicone, treatment with a silane coupling agent, treatment with a titanium coupling agent, treatment with silane, preferably alkylsilane or alkylsilazane, treatment with an oil agent, treatment with N-acylated lysine, treatment with polyacrylic acid, treatment with a metal soap, preferably stearic acid or myristic acid salts, treatment with an acrylic resin, treatment with metal oxide, treatment with gelatin, and treatment with deoxyribonucleic acid. It is more desirable to apply a combination of plural treatments selected from the aforementioned treatments.

[0033]

In the present invention, inorganic and organic UV-ray protection agents can be used. Examples of the inorganic ones include metal oxides such as titanium dioxide, low-order titanium oxide, zinc oxide, cerium oxide, and cerium oxide with suppressed activity; metal hydroxide such as iron hydroxide; metal flakes such as tabular iron oxide and aluminum flakes, and ceramics such as silicon carbide. In particular, it is desirable to use at least one kind selected from fine particle metal oxides or fine particle metal hydroxides with a mean particle size ranging from 5 to 100 nm. They may be surface treated as the aforesaid pigments. Examples of the organic UV-ray protection agents are as follows: 2-ethylhexyl paramethoxycinnamate (also called octyl paramethoxycinnamate), 2-hydroxy-4-methoxybenzophenone, 2-hydroxy-4-methoxybenzophenone-5-sulfuric acid, 2,2'-dihydroxy-4-methoxybenzophenone, p-methoxyhydrocinnamic acid diethanolamine salt, paraaminobenzoic acid (hereinafter referred to as PABA), ethyldihydroxypropyl PABA, glyceryl PABA, homomenthyl salicylate, methyl-0-aminobenzoate, 2-ethylhexyl-2-cyano-3,3-diphenylacrylate, octyldimethyl PABA, octyl salicylate, 2-phenyl-benzimidazole-5-sulfuric acid, triethanolamine salicylate, 3-(4-methylbenzylidene)camphor, 2,4-dihydroxybenzophenone, 2,2', 4, 4'-tetrahydroxybenzophenone, 2,2'-dihydroxy-4,4'-dimethoxybenzophenone, 2-hydroxy-4-N-octoxybenzophenone, 4-isopropyl dibenzoylmethane, 4-tert-butyl-4'-methoxydibenzoylmethane, octyltriazone, 2-ethylhexyl 4-(3,4-dimethoxyphenylmethylene)-2,5-dioxo-1-imidazolidine propionate, polymer derivatives thereof, and silane derivatives thereof. It is also possible to use an organic UV-ray protection agent encapsulated in polymer powder. The polymer powder may be

hollow or not, a mean primary particle size may be in a range of 0.1 to 50 μ m, and the particle distribution may be broad or sharp. Types of the polymer include acrylic resins, methacrylic resins, styrene resins, polyurethane resins, polyethylenes, polypropylenes, polyethylene terephthalates, silicone resins, nylons, and acrylamide resins. The organic UV-ray protection agent is preferably incorporated in the polymer powder in a range from 0.1 to 30 mass% relative to the powder mass. In particular, it is desirable to use 4-tert-butyl-4'-methoxydibenzoylmethane which is a UVA absorbent.

[0034]

Among the aforementioned UV-ray protective components, use is preferably made of at least one selected from the group consisting of fine particle titanium dioxide, fine particle zinc oxide, 2-ethylhexyl paramethoxycinnamate, 4-tert-butyl-4'-methoxydibenzoylmethane, and UV absorbents of the benzophenone series, because these are widely used and can be obtained easily and their UV protection effect is high. In particular, it is preferred to use an inorganic one and an organic one in combination. It is also preferred to use a combination of one for UV-A with one for UV-B.

[0035]

Examples of the unctuous agents used in the present invention include avocado oil, linseed oil, almond oil, Ibota wax, perilla oil, olive oil, cacao butter, kapok wax, kaya oil, carnauba wax, Glycyrrhiza oil, candelilla wax, beef tallow, neat's-foot oil, beef bone fat, hydrogenated beef tallow, apricot kernel oil, spermaceti wax, hydrogenated oil, wheat germ oil, sesame oil, rice germ oil, rice bran oil, sugar cane wax, sasanqua oil, safflower oil, shear butter, Chinese tung

oil, cinnamon oil, jojoba wax, shellac wax, turtle oil, soybean oil, tea seed oil, camellia oil, evening primrose oil, corn oil, lard, rapeseed oil, Japanese tung oil, rice bran oil, germ oil, horse fat, persic oil, palm oil, palm kernel oil, castor oil, hydrogenated castor oil, castor oil fatty acid methylester, sunflower oil, grape oil, bayberry wax, jojoba oil, macadamia nut oil, beeswax, mink oil, cottonseed oil, cotton wax, Japanese wax, Japanese wax kernel oil, montan wax, coconut oil, hydrogenated coconut oil, tri-coconut oil fatty acid glyceride, mutton tallow, peanut oil, lanolin, liquid lanolin, hydrogenated lanolin, lanolin alcohol, hard lanolin, lanolin acetate, isopropyl lanolate, hexyl laurate, POE lanolin alcohol ether, POE lanolin alcohol acetate, polyethylene glycol lanolate, POE hydrogenated lanolin alcohol ether, and egg yolk oil; hydrocarbon oils, e.g., ozokerite, squalane, squalene, ceresin, paraffin, paraffin wax, liquid paraffin, pristane, polyisobutylene, microcrystalline wax, and Vaseline; higher fatty acids, e.g., lauric acid, myristic acid, palmitic acid, stearic acid, behenic acid, undecylenic acid, oleic acid, linoleic acid, linolenic acid, arachidonic acid, eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), isostearic acid, and 12-hydroxystearic acid; higher alcohols, e.g., lauryl alcohol, myristyl alcohol, palmityl alcohol, stearyl alcohol, behenyl alcohol, hexadecyl alcohol, oleyl alcohol, isostearyl alcohol, hexylundecanol, octyl dodecanol, cetostearyl alcohol, 2-decyldodecyl alcohol, cholesterol, phytosterol, POE cholesterol ether, monostearyl glycerin ether (batyl alcohol), and monooleyl glycerol ether (cerakyl alcohol);

[0036]

ester oils, e.g., diisobutyl adipate, 2-hexyldecyl adipate, di-2-heptylundecyl adipate, N-alkyl glycol monoisostearate, isocetyl isostearate, trimethylolpropane triisostearate, ethylene glycol di-2-ethylhexanoate, cetyl 2-ethylhexanoate, trimethylolpropane tri-2-ethylhexanoate, pentaerythritol tetra-2-ethylhexanoate, cetyl octanoate, octyldodecyl gum ester, oleyl oleate, octyldodecyl oleate, decyl oleate, isononyl isononanate, neopentyl glycol dicaprylate, triethyl citrate, 2-ethylhexyl succinate, amyl acetate, ethyl acetate, butyl acetate, isocetyl stearate, butyl stearate, diisopropyl sebacinate, di-2-ethylhexyl sebacinate, cetyl lactate, myristyl lactate, isopropyl palmitate, 2-ethylhexyl palmitate, 2-hexyldecyl palmitate, 2-heptylundecyl palmitate, cholesteryl 12-hydroxystearate, dipentaerythritol fatty acid esters, isopropyl myristate, octyldodecyl myristate, 2-hexyldecyl myristate, myristyl myristate, hexyldecyl dimethyloctanoate, ethyl laurate, hexyl laurate, 2-octyldodecyl N-lauroyl-L-glutamate, and diisostearyl malate; and glyceride oils, e.g., acetoglyceryl, glycerol triisooctanoate, glyceryl triisostearate, glyceryl triisopalmitate, glyceryl monostearate, glyceryl di-2-heptylundecanoate, glyceryl trimyristate, and diglyceryl myristyl isostearate.

[0037]

Silicone oils such as dimethylorganopolysiloxanes, methylphenylpolysiloxane, amine-modified organopolysiloxanes, organopolysiloxanes having an alcoholic hydroxyl group, organopolysiloxanes having an alkyl group except methyl or phenyl, and amodimethicone can be preferably used because of their excellent miscibility with the volatile silicones (1), (2).

[0038]

Fluorine unctuous agents can be incorporated such as fluorine-modified silicones, perfluoropolyethers, fluorinated pitch, perfluorodecaline, fluorocarbons such as perfluorooctane, fluoroalcohols, and perfluoroalkylalkylethers. In particular, fluorine-modified silicones, perfluoroalkylbiphenyl-modified silicones, and perfluoropolyethers are desirable because of their versatility.

[0039]

Examples of the moisturizing agent used in the present invention include sugar alcohols such as sorbitol, maltose, and maltitol; sterols such as cholesterol, sitosterol, phytosterol, and lanosterol; glucose, sucrose, lactose, raffinose, trehalose, xylitol, glycerin, propylene glycol, dipropylene glycol, tripropylene glycol, polypropylene glycol, 1,3-butylene glycol, ethylene glycol, diethylene glycol, triethylene glycol, polyglycerin, hyaluronic acid and its salts, chondroitin sulfuric acid and its salts, pyrrolidone carboxylic acid salts, polyoxyethylene methylglucoside, polyoxypropylene methylglucoside, and ethylglucoside.

[0040]

Examples of the thickener used in the present invention include plant-derived polymers such as gum Arabic, tragacanth gum, arabinogalactan, locust bean gum (carob gum), guar gum, karaya gum, carrageenan, pectin, agar-agar, quince seed (i.e., marmelo), starch from rice, corn, potato or wheat, algae colloid, and trant gum; bacteria-derived polymers such as xanthan gum, dextran, succinoglucan, and pullulan; animal-derived polymers such as collagen, casein, albumin, and gelatin; starch-derived polymers such as carboxymethyl starch

and methylhydroxypropyl starch; cellulose polymers such as methyl cellulose, ethyl cellulose, methylhydroxypropyl cellulose, carboxymethyl cellulose, hydroxymethyl cellulose, hydroxypropyl cellulose, nitrocellulose, sodium cellulose sulfate, sodium carboxymethyl cellulose, crystalline cellulose, and cellulose powder; alginic acid-derived polymers such as sodium alginate and propylene glycol alginate; vinyl polymers such as polyvinyl methylether, polyvinylpyrrolidone, and carboxyvinyl polymer; polyoxyethylene polymers such as polyethylene glycol; polyoxyethylene/polyoxypropylene copolymers; acrylic polymers such as sodium polyacrylate, polyethyl acrylate, and polyacrylamide; polyethyleneimine; cationic polymers; and inorganic thickening agents such as, bentonite, aluminum magnesium silicate, laponite, smectite, saponite, hectorite, and silicic anhydride. Another thickener is an oil-soluble gelling agent. Use may be made of at least one selected from the following thickeners: metal soaps such as aluminum stearate, magnesium stearate, and zinc myristate; α amino acid derivatives such as N-lauroyl-L-glutamic acid, α , γ -di-n-butylamine; dextrin fatty acid esters such as dextrin palmitate, dextrin stearate, and dextrin 2-ethylhexane palmitate; sucrose fatty acid esters such as sucrose palmitate and sucrose stearate; benzylidene derivatives of sorbitol such as monobenzylidene sorbitol and dibenzylidene sorbitol; clay minerals modified with an organic moiety such as dimethylbenzyldecylammonium montmorillonite clay, dimethyldioctadecylammonium montmorillonite, and octadecyldimethylbenzylammonium montmorillonite.

[0041]

As the surfactant, there are anionic, cationic, nonionic, and amphoteric surfactants. Any one of the surfactants can be used according to cosmetics as far as it is commonly used in the cosmetics. Specific examples are shown below. Examples of the anionic surfactants include fatty acid soaps, such as sodium stearate and triethanolamine palmitate, alkylether carboxylic acids and salts thereof, carboxylates of condensates from amino acids and fatty acids, alkyl sulfonic acids, alkenesulfonates, fatty acid ester sulfonates, fatty acid amide sulfonates, sulfonate salts of the formalin condensates with alkyl sulfonates, salts of sulfate esters such as salts of alkyl sulfates, salts of secondary higher alcohol sulfates, salts of alkyl/allyl ether sulfates, salts of fatty acid ester sulfates, salts of fatty acid alkylolamide sulfates, and Turkey Red oil, alkyl phosphates, ether phosphates, alkylallylether phosphates, amide phosphates, and N-acylamino surfactants; examples of the cationic surfactants include amine salts such as alkylamine salts, polyamine and amino alcohol fatty acid derivatives, alkyl quaternary ammonium salts, aromatic quaternary ammonium salts, pyridium salts and imidazolium salts; examples of the nonionic surfactants include sorbitan fatty acid esters, glycerin fatty acid esters, polyglycerin fatty acid esters, propylene glycol fatty acid esters, polyethylene glycol fatty acid esters, sucrose fatty acid esters, polyoxyethylene alkylethers, polyoxypropylene alkylethers, polyoxyethylene alkylphenylether, polyoxyethylene fatty acid esters, polyoxyethylene sorbitan fatty acid esters, polyoxyethylene sorbitol fatty acid esters, polyoxyethylene glycerin fatty acid esters, polyoxyethylene propylene glycol fatty acid esters, polyoxyethylene castor oil, polyoxyethylene

hydrogenated castor oil, polyoxyethylene phytostanolether, polyoxyethylene phytosterolether, polyoxyethylene cholestanolether, polyoxyethylene cholesterylether, alkanolamide, sugar ethers, and sugar amides; and examples of the amphoteric surfactants include betaine, aminocarboxylic acid salts, and imidazoline derivatives. The surfactant is incorporated preferably in an amount of from 0.1 to 20 mass %, particularly from 0.5 to 10 mass %, based on a total mass of the cosmetic. It is possible to use one surfactant, or at least two surfactants.

[0042]

Examples of antiseptics include alkyl paraoxybenzoates, benzoic acid, sodium benzoate, sorbic acid, potassium sorbate, and phenoxyethanol may be used. For the antibacterial agents, benzoic acid, salicylic acid, carbolic acid, sorbic acid, paraoxybenzoic acid alkyl esters, parachloromethacresol, hexachlorophene, benzalkonium chloride, chlorohexyidine chloride, trichlorocarbanilide, triclosan, photosensitizer and phenoxyethanol.

[0043]

The bioactive components used in the present invention include materials which impart certain bioactivities to the skin when applied on the skin. For example, the following agents are used: anti-inflammatory agents, anti-aging agents, UV protection agents, astringents, antioxidants, hair growth stimulants, hair restoration tonics, humectants, blood circulation promoters, antibacterial agents, drying agents, cooling agents, hot poultice agent, vitamins, amino acids, wound healing promoters, anti-irritants, painkillers, cellular activators, and enzyme components. In particular, plant

extracts, seaweed extracts, and herbal components from natural sources are desirable. In the present invention, one or more kinds of these bioactive components may preferably be added.

[0044]

Examples of bioactive components include Ashitaba extract, avocado extract, hydrangea extract, Althea extract, Arnica extract, aloe extract, apricot extract, apricot kernel extract, Ginkgo Biloba extract, fennel extract, turmeric[Curcuma] extract, oolong tea extract, rose fruit extract, Echinacea extract, Scutellaria root extract, Phellodendro bark extract, Japanese Coptis extract, Barley extract, Hyperium extract, White Nettle extract, Watercress extract, Orange extract, Dehydrated saltwater, seaweed extract, hydrolyzed elastin, hydrolyzed wheat powder, hydrolyzed silk, Chamomile extract, Carrot extract, Artemisia extract, Glycyrrhiza extract, hibiscus tea extract, Pyracantha Fortuneana Fruit extract, Kiwi extract, Cinchona extract, cucumber extract, guanocine, Gardenia extract, Sasa Albo-marginata extract, Sophora root extract, Walnut extract, Grapefruit extract, Clematis extract, Chlorella extract, mulberry extract, Gentiana extract, black tea extract, yeast extract, burdock extract, rice bran ferment extract, rice germ oil, comfrey extract, collagen, cowberry extract, Gardenia extract, Asiasarum Root extract, Family of Bupleurum extract, umbilical cord extract, Salvia extract, Saponaria extract, Bamboo extract, Crataegus fruit extract, Zanthoxylum fruit extract, shiitake extract, Rehmannia root extract, gromwell extract, Perilla extract, linden extract, Filipendula extract, peony extract, Calamus Root extract, white birch extract, Horsetail extract, Hedera Helix(Ivy) extract, hawthorn extract, Sambucus nigra extract, Achillea millefolium extract, Mentha

piperita extract, sage extract, mallow extract, Cnidium officinale Root extract, Japanese green gentian extract, soybean extract, jujube extract, thyme extract, tea extract, clove extract, Gramineae imperata cyrillo extract, Citrus unshiu peel extract, Japanese Angelica Root extract, Calendula extract, Peach Kernel extract, Bitter orange peel extract, Houttuyna cordata extract, tomato extract, natto extract, Ginseng extract, garlic extract, wild rose extract, hibiscus extract, Ophiopogon tuber extarct, Nelumbo nucifera extract, parsley extract, honey, hamamelis extract, Parietaria extract, Isodonis herba extract, bisabolol extract, Loquat extract, coltsfoot extract, butterbur extract, Porid cocos wolf extract, extract of butcher's broom, grape extract, propolis extract, luffa extract, safflower extract, peppermint extract, linden tree extract, Paeonia extract, hop extract, pine tree extract, horse chestnut extract, Mizu-bashou [*Lysichiton camtschatcense*] extract, Mukurossi peel extract, Melissa extract, peach extract, cornflower extract, eucalyptus extract, saxifrage extract, citron extract, coix extract, mugwort extract, lavender extract, apple extract, lettuce extract, lemon extract, Chinese milk vetch extract, rose extract, rosemary extract, Roman Chamomile extract, and royal jelly extract.

[0045]

Further examples of the bioactive components include the followings; biopolymers such as deoxyribonucleic acid, mucopolysaccharides, sodium hyarulonate, sodium chondroitin sulfate, collagen, elastin, chitin, chitosan, and hydrolyzed chorionic membrane; amino acids such as glycine, valine, leucine, isoleucine, serine, threonine, phenylalanine, arginine, lysine, aspartic acid, glutamic acid, cystine, cysteine,

methionine, and tryptophan; hormones such as estradiol and ethenylestradiol; moisturizing components such as amino acids, sodium lactate, urea, sodium pyrrolidonecarboxylate, betaine, and whey; oily components such as sphingolipids, ceramide, cholesterol, cholesterol derivatives, and phospholipids; anti-inflammatory agents such as ϵ -aminocapronic acid, glycyrrhizic acid, β -glycyrrhetic acid, lysozyme chloride, guaiazulene, hydrocortisone, arantoin, tranexamic acid, and azulene; vitamins such as vitamin A, B2, B6, C, D, E, calcium pantothenate, biotin, nicotinic amide, and vitamin C ester; active components such as arantoin, diisopropylamine dichloroacetate, and 4-aminomethylcyclohexanoic acid; antioxidants such as tocopherol, carotinoide, flavonoid, tannin, lignan, saponin, butylhydroxyanisole, dibutylhydroxytoluene, and phytin; cellular activators such as α -hydroxy acid, β -hydroxy acid; blood circulation promoters such as γ -ryzanol and vitamin E derivatives; wound healing promoters such as retinol and retinol derivatives; refrigerants such as cephantine, Glycyrrhiza extract, cayenne pepper tincture, hinokitiol, iodized garlic extract, pyridoxine hydrochloride, dl- α -tocopherol, dl- α -tocopherol acetic acid, nicotinic acid, nicotinic acid derivatives, calcium pantothenate, D-pantothenyl alcohol, acetyl pantothenyl ethylether, biotin, arantoin, isopropylmethylphenol, estradiol, ethinyl estradiol, carpronium chloride, benzalkonium chloride, diphenhydramine hydrochloride, tacanal, camphor, salicylic acid, nonylic acid vanillylamide, nonanoic acid vanillylamide, pirocton olamin, glyceryl pentadecanoate, 1-menthol, and camphor; hair restorers such as mononitro guaiacol, resolcinol, γ -aminobutylic acid, γ -aminobutylic acid- β -hydroxybutylic acid, benzethonium chloride,

mexiletine hydrochloride, auxin, female hormones, cantharis tincture, cyclosporin, zinc pyrithione, hydrocortisone, minoxyzil, polyoxyethylenesorbitan monostearate, peppermint oil, and sasanishiki extract.

[0046]

Examples of the pH regulator include lactic acid, citric acid, glycolic acid, succinic acid, oxalic acid, dl-malic acid, calcium carbonate, sodium hydrogen carbonate, and ammonium hydrogen carbonate. Examples of the chelating agent include alanine, sodium edetate, sodium polyphosphate, sodium methaphosphate, and phosphoric acid.

[0047]

Examples of the solvent to be used include light isoparaffin, ethers, LPG, N-methylpyrrolidone, and next-generation Flon besides water such as purified water, mineral water and a deep seawater.

[0048]

Applications of the present cosmetic are not limited to particular ones. Preferred applications include skin care products, hair care products, makeup products, UV-ray protection products, and perfume products. For example, basic cosmetics such as milky lotions, creams, lotions, calamine lotions, sunscreen agents, sun tanning agents, aftershave lotions, preshave lotions, facial pack formulas, cleansing products, facial washes, acne remedy cosmetics, and essences; makeup cosmetics such as foundation, face powder, eye shadow, eyeliner, eyebrow, cheek, nail colors, lip cream, and lipstick; shampoos, rinses, conditioners, hair colors, hair tonics, hair-setting agents, body powder, hair restorers, deodorants, hair removers, soaps, body shampoos, bath agents, hand soaps, and

perfume products.

[0049]

The cosmetic product may be in any form such as liquid form, milky liquid form, cream form, solid form, paste form, gel form, powder form, multiphase form, moose form, and spray form.

[0050]

[Examples]

The present invention will be explained in detail below by referring to Examples and Comparative Examples. However, the present invention shall not be limited to these examples.

In the followings, the volatile silicone having the structure of the following (1) is referred to as the volatile silicone (1), and the one having the structure of the following (2) is referred to as the volatile silicone (2).

(1) $\{(\text{CH}_3)_3\text{SiO}\}_4\text{Si}$

(2) $\{(\text{CH}_3)_3\text{SiO}\}_2\text{Si}(\text{CH}_3)\text{OSi}(\text{CH}_3)_2\text{OSi}(\text{CH}_3)_3$

In the followings, contents are expressed in mass% unless otherwise specified.

[0051]

[Evaluation of Effects on the Skin]

For each cosmetic preparation to be evaluated, dedicated 10 panelists are summoned, some of whom evaluated a plurality of preparations, and rated the preparations according to the criteria shown in the following Table 1. The ratings of all the panelists were totaled to be evaluation results. Accordingly, a higher score means that a higher effect was observed in an evaluated item(Full score: 50 points).

[0052]

[Table 1]

Criteria	Score
Significant effect is appreciated.	5
Effect is appreciated.	4
A little effect is appreciated.	3
Little effect is appreciated.	2
No effect is appreciated.	1

[0053]

[Example 1]: UV-ray Protective Cosmetic Base

A solution of trimethylsiloxy silicate, a kind of silicone resin, dissolved in the volatile silicone (1) at a concentration of 50% by mass was prepared and a UV-ray protective cosmetic base was prepared according to the formulation shown in the table below.

(Component A)	%
(1) Silicone-treated titanium dioxide fine particle	4
(2) Methyltrimethicone	7
(3) Volatile silicone (1)	3
(4) Polyether-modified silicone (KF6017, ex Shin-Etsu Chemical Co., Ltd.)	1
(Component B)	
(5) Silicone-treated zinc oxide fine particle	6
(6) Perfluoroalkylphosphate-treated colored skin-color mica	0.5
(Component C)	
(7) Crosslinked organopolysiloxane spherical powder (Elastomer)	4
(8) Dimethylpolysiloxane (KF96A-6)	2
(9) Fluorinated dimethiconol	1
(10) Volatile silicone (2)	15
(11) Trimethylsiloxy silicate solution	6
(12) Octyl paramethoxycinnamate	3
(13) Perfluoropolyether	0.5
(Component D)	
(14) Ethyl alcohol	10
(15) Purified water	Balance
(16) Aloe extract	1
(17) Cranberry extract	1
(18) Hibiscus extract	0.5

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with viscosity of 6 mm²/s

(Preparation Method)

Step 1: Component A was ground with a roller mill to form a paste.

Step 2: Component C was roughly mixed and ground well with a mixer.

Step 3: After mixing Component B with Component C and forming dispersion, Component A was added thereto and mixed well.

Step 4: Component D which has been made into a homogeneous solution was added and stirred and then the mixture obtained was packed together with a stainless ball in a container to obtain a product.

[0054]

Comparative Example 1

Example 1 was repeated except that volatile cyclic silicone hexamer was used in place of the volatile silicones (1) and (2).

[0055]

Examples 2, 3 and 4: Whitening Cream for Daytime Use

A whitening cream was prepared in the formulation shown below.

A mixed solution of the volatile silicone (2) and methyltrimethicone in a 1:1 ratio was used.

Example No.	2	3	4
(Component A) (%)			
(1) KF6017	1	1	1
(2) KF6026	-	-	2
(3) KF56	5	5	5

(4) KF995	12	3	-
(5) The mixed solution (Component B)	10	19	12
(6) Glycerin	5	5	5
(7) Dipropylene glycol	10	10	10
(8) Methyl paraoxybenzoate	0.2	0.2	0.2
(9) Sodium ascorbyl sulfate	0.1	0.1	0.1
(10) Sodium ascorbyl phosphate	0.1	0.1	0.1
(11) γ - amino butyric acid	0.1	0.1	0.1
(12) Apple seed kernel extract (antioxidant)	0.1	0.1	0.1
(13) Sodium chloride	0.9	0.9	0.9
(14) Perfume	0.1	0.1	0.1
(15) Purified water	Balance	Balance	Balance

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer (HLB = 4.7)

KF56 (produced by Shin-Etsu Chemical Co., Ltd.):

Methylphenylpolysiloxane

KF995 (produced by Shin-Etsu Chemical Co. Ltd.):

Decamethylcyclopentasiloxane (D5)

(Preparation Method)

Step 1: Component A was dissolved by heating at 60°C.

Step 2: Component B was dissolved by heating at 60°C.

Step 3: Component A was added to Component B while stirring to form an emulsion.

Step 4: Subsequently, the mixture was cooled to 30°C while stirring and packed in a container to obtain a product.

[0056]

Comparative Example 2

Example 3 was repeated except that ethanol was used in place of the mixed solution.

[0057]

Comparative Example 3

Example 4 was repeated except that light liquid paraffin was used in place of the mixed solution.

[0058]

Example 5: Sunscreen Agent

A sunscreen agent was prepared according to the formulation described below. The UV-ray protective components used were 2-ethylhexyl paramethoxycinnamate, treated fine particle titanium dioxide, treated fine particle zinc oxide, and treated yellow fine particle titanium dioxide. As a silicone resin compound, trimethylsiloxy silicate was used.

The treated titanium dioxide fine particle used was prepared by coating titanium dioxide fine particle having a mean particle size of 17 nm coated with silica/alumina with 8 mass% octyltrimethoxysilane and heat-treating at 160°C. The treated zinc oxide fine particle was prepared by coating zinc oxide fine particle having a mean particle size of 50 nm treated with silica with 3 mass % of methylhydrogenpolysiloxane and heat treating at 170°C. The treated yellow titanium dioxide fine particle was prepared by coating iron-doped titanium dioxide fine particle treated with silica with 3 mass % of methylhydrogenpolysiloxane and heat treating at 130°C.

[0059]

	(%)
Component A)	
Treated titanium dioxide fine particle	8.0
Volatile silicone (1)	9.0
Methyltrimethicone	3.0
Component B)	
Treated yellow titanium dioxide fine particle	0.8
Treated zinc oxide fine particle	12.0
Component C)	
Three-dimensionally crosslinked organopolysiloxane spherical powder (Elastomer)	1.0

Dimethiconol	6.0
Volatile silicone (1)	15.0
Trimethylsiloxy silicate	6.0
2-ethylhexyl paramethoxycinnamate (Component D)	10.0
Ethyl alcohol	13.0
Purified water	Balance
Aloe extract	0.5

[0060]

Component A was ground with a roller mill to form a paste. Component C was roughly mixed and thoroughly ground with a mixer. After mixing Component B with Component C to make dispersion, Component A was added and the mixture was further mixed well. Subsequently, Component D, which had been dissolved homogeneously, was added and stirred thoroughly, and then the mixture was packed with a stainless ball in a container.

[0061]

Comparative Example 4

Example 5 was repeated except that volatile linear silicone tetramer was used in place of the volatile silicone (1).

[0062]

Example 6: Sunscreen Agent (Cream)

(Components)	(%)
(1) Methyltrimethicone	3.0
(2) Volatile silicone (1)	17.0
(3) Liquid paraffin	10.0
(4) KF6017	1.9
(5) KF6026	4.0
(6) 4-t-butyl-4'-methoxydibenzoylmethane	7.0
(7) Distearyldimethylammonium chloride	0.8
(8) Vitamin E acetate	0.1
(9) Ethanol	1.0
(10) Sumectite	1.2
(11) Antiseptic	q.s.
(12) Perfume	q.s.
(13) Purified water	Balance

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer (HLB = 4.7)

(Preparation Method)

A: Components (1) through (8) and (11) were mixed while heating.

B: Components (9), (10) and (13) were heated and mixed to make homogeneous dispersion.

C: While stirring, the dispersion from B was gradually added to the mixture from A to emulsify and, after cooling, Component (12) was added to obtain a sunscreen agent (cream).

[0063]

Example 7: Sunscreen Agent (Cream)

(Components)	(%)
(1) Methyltrimethicone	10.0
(2) Volatile silicone (2)	8.0
(3) KF56	2.0
(4) Liquid paraffin	1.5
(5) KF6012	4.0
(6) Octyl paramethoxycinnamate	5.0
(7) 1,3-butylene glycol	4.0
(8) Sodium chloride	1.0
(9) Antiseptic	q.s.
(10) Perfume	q.s.
(11) Purified water	Balance

KF56 (produced by Shin-Etsu Chemical Co., Ltd.):

Methylphenylpolysiloxane

KF6012 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer (HLB = 7.0)

(Preparation Method)

A: Components (1) - (6) were mixed while heating.

B: Components (7) - (9) and (11) were heated to be dissolved.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (10) was added to obtain a sunscreen agent (cream).

[0064]

Example 8: Sunscreen Agent (Cream)

(Components)	(%)
(1) Volatile silicone (1)	16.5
(2) Methyltrimethicone	1.0
(3) KP545	12.0
(4) Glycerol triisooctanoate	5.0
(5) Octyl paramethoxycinnamate	6.0
(6) KSG21	5.0
(7) KF6017	1.0
(8) Lipophilic-treated zinc oxide	20.0
(9) Sodium chloride	0.5
(10) 1,3-butylene glycol	2.0
(11) Antiseptic	q.s.
(12) Perfume	q.s.
(13) Purified water	Balance

KP545 (produced by Shin-Etsu Chemical Co., Ltd.):

Acrylic silicone copolymer resin / decamethylcyclopentasiloxane
30% solution

KSG21 (produced by Shin-Etsu Chemical Co., Ltd.):

Crosslinked polyether-modified methylpolysiloxane
/dimethylpolysiloxane

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

(Preparation Method)

A: Component (3) was added to a portion of Component (1) to obtain a homogeneous mixture and then Component (8) was added to be dispersed with a beads mill.

B: The remaining portion of Component (1), Component (2) and Components (4) - (7) were mixed homogeneously.

C: Components (9) - (11) and Component (13) were mixed to dissolve.

D: C was added to B to emulsify, and A and Component (12) were added to obtain a sun screen cream.

[0065]

Example 9: Sunscreen Agent (Astringent)

(Components)	(%)
(1) Methyltrimethicone	13.0
(2) Volatile silicone (1)	1.0
(3) KF615A	10.0
(4) Squalane	1.5
(5) Octyl paramethoxycinnamate	3.0
(6) Titanium TTO-S2	2.0
(7) polymethylsilsesquioxane	0.7
(8) 1,3-butylene glycol	10.0
(9) Sodium chloride	2.0
(10) L-proline	0.1
(11) 2-hydroxyoctanoic acid	1.0
(12) 2-hydroxypropanoic acid	5.0
(13) Sodium hydroxide	q.s.
(14) Antiseptic	q.s.
(15) Perfume	q.s.
(16) Purified water	Balance

KF615A (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer
(HLB = 14.0)

Titanium TTO-S2 (produced by Ishihara Sangyou Co., Ltd.):

Ultra-fine particle titanium dioxide treated for hydrophobicity
(Preparation Method)

A: Components (8) - (16) were dissolved homogeneously.

B: Components (1) - (5) were mixed and Components (6) and (7) were added to obtain a homogeneous mixture.

C: While stirring, B was gradually added to A to emulsify to obtain a sun blocking agent(astringent.)

[0066]

Example 10: Sunscreen Agent (Milky Lotion)

A mixed solution of the volatile silicone (1), volatile silicone (2) and methyltrimethicone in a ratio of 4:1:5 was used.

(Components)	(%)
(1) The mixed solution	25.0
(2) Diglyceryl monoisostearate	1.5
(3) Decaglyceryl pentaisostearate	1.5
(4) KF6012	0.5
(5) Olive oil	1.0
(6) Titanium dioxide fine particle	7.0
(7) Glycerin	5.0
(8) Sodium chloride	1.5
(9) Antiseptic	q.s.
(10) Perfume	q.s.
(11) Purified water	Balance

KF6012 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer
(HLB = 7.0)

(Preparation Method)

A: Components (1) - (5) were mixed while heating and Component (6) was dispersed homogeneously.

B: Components (7) - (9) and Component (11) were mixed while heating.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (10) was added to obtain a sunscreen agent (milky lotion).

[0067]

Example 11: Sunscreen Agent (Milky Lotion)

(Components)	(%)
(1) Volatile silicone (2)	15.0
(2) Ethanol	5.0
(3) KF56	3.0
(4) Sorbitan monoisostearate	1.0
(5) KF6012	0.5

(6) Silicone resin	1.0
(7) Octyl paramethoxycinnamate	4.0
(8) Titanium dioxide fine particle	8.0
(9) Sorbitol	2.0
(10) Sodium chloride	2.0
(11) Antiseptic	q.s.
(12) Perfume	q.s.
(13) Purified water	Balance

KF56 (produced by Shin-Etsu Chemical Co., Ltd.):

Methylphenylpolysiloxane

Silicone resin: 50% solution, in M3T, of a silicone network compound (trimethylsiloxy silicate) with a ratio, $[\text{Me}_3\text{SiO}_{1/2}]/[\text{SiO}_2]$, of 0.8

KF6012 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer (HLB = 7.0)

(Preparation Method)

A: Components (1) - (7) were mixed while heating and Component (8) was dispersed homogeneously.

B: Components (9) - (11) and Component (13) were mixed while heating.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (12) was added to obtain a sunscreen agent (milky lotion).

[0068]

Evaluation results of the Examples 1-11 and Comparative Examples 1-4.

[0069]

	No irritation to the skin	Comfortable to apply	Easy to use as a cosmetic base
Example 1	45	42	44

Comp.Ex.*1	42	34	36
Example 2	42	40	39
Example 3	43	43	41
Example 4	42	41	41
Comp.Ex. 2	10	19	10
Comp.Ex. 3	11	29	13
Example 5	39	37	39
Comp.Ex. 4	18	20	12
Example 6	44	38	38
Example 7	40	39	39
Example 8	41	40	40
Example 9	39	39	44
Example 10	41	38	38
Example 11	39	42	41

* Comparative Example

[0070]

From this result, it is found that Examples of the present invention showed excellent performances in all the evaluation items. Compared with Comparative Examples, Examples spread well, provide appropriate moisturizing and refreshing feel, and no dry feel, to be excellent in sensory feels. In addition, Examples had excellent UV-protective effect.

[0071]

Example 12: Suntan Cream

(Components)	(%)
(1) Volatile silicone (1)	12.0
(2) Methyltrimethicone	3.0
(3) KF96A-100	5.0
(4) KP-562	0.5
(5) Branched silicone type polyglyceryl modified silicone (HLB =5)	2.2
(6) KF6026	6.0
(7) Palmitic acid	0.2
(8) Dimethyloctyl paraaminobenzoic acid	0.5
(9) 4-t-butyl-4'-methoxy-dibenzoylmethane	0.5
(10) Kaoline	0.5
(11) Iron oxide red	0.2

(12) Iron oxide yellow	0.3
(13) Iron oxide black	0.1
(14) Titanium oxide coated mica	1.0
(15) Sodium L-glutamate	3.0
(16) 1,3-butylene glycol	5.0
(17) Dioctadecyldimethyl ammonium chloride	0.1
(18) Antioxidant	q.s.
(19) Antiseptic	q.s.
(20) Perfume	q.s.
(21) Purified water	Balance

KF96A-100 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 100 mm²/s

KP-562 (produced by Shin-Etsu Chemical Co., Ltd.):

Behenyl-modified acrylic silicone graft copolymer

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer (HLB = 4.7)

(Preparation Method)

A: Components (1) - (9) and Components (18)- (19) were dissolved by heating.

B: After heat-mixing Component (17) and a portion of Component (21), Components (10) - (14) were added to disperse.

C: Components (15) - (16) and the remaining portion of Component (21) were dissolved homogeneously and combined with B.

D. While stirring, C was gradually added to A to emulsify and, after cooling, Component (20) was added to obtain a suntan cream.

The suntan cream thus obtained had a fine texture, good spreadability to give moisturized and refreshing feel. It fitted well and was durable. It did not change with temperature or time, showing no phase separation or powder agglomeration.

[0072]

Example 13: Foundation

(Components)	(%)
(1) Methyltrimethicone	30.0
(2) Volatile silicone (1)	15.0
(3) KF96A-6	5.0
(4) KF6017	1.5
(5) KF6026	0.5
(6) Montmorillonite modified by octadecyldimethylbenzylammonium	4.0
(7) Titanium dioxide treated for hydrophobicity*	10.0
(8) Talc treated for hydrophobicity*	6.0
(9) Mica treated for hydrophobicity*	6.0
(10) Iron oxide red* treated for hydrophobicity	1.6
(11) Iron oxide yellow* treated for hydrophobicity	0.7
(12) Iron oxide black* treated for hydrophobicity	0.2
(13) Dipropylene glycol	5.0
(14) Methyl paraoxybenzoate	0.3
(15) 2-amino-2-methyl-1,3-propanediol	0.2
(16) Hydrochloric acid	0.1
(17) Perfume	q.s.
(18) Purified water	Balance

KF96A-100 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 100 mm²/s

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/polyoxypropyleneoleylmethyl

siloxane/dimethylsiloxane copolymer (HLB = 4.7)

* Treatment for hydrophobicity: after adding 2% of methylhydrogenpolysiloxane to the powder, a heat treatment was applied.

(Preparation Method)

A: Components (1) - (6) were mixed while heating and Components (7) - (12) were added to obtain a homogeneous mixture.

B: Components (13) - (16) and Component (18) were dissolved by heating (pH of the aqueous system: 9.0).

C. While stirring, B was gradually added to A to emulsify and, after cooling, Component (17) was added to obtain a foundation.

The foundation thus obtained had a fine texture, good spreadability to give moisturized and refreshing feel. It was durable and stable with no change with temperature or time.

[0073]

Example 14: Foundation

(Components)	(%)
(1) KF96A-6	5.0
(2) Volatile silicone (2)	4.0
(3) Methyltrimethicone	11.0
(4) Squalane	4.0
(5) Neopentyl glycol dioctanoate	3.0
(6) Myristic acid isostearic acid diglyceride	2.0
(7) α -monoisostearyl glycerylether	1.0
(8) KF6015	1.0
(9) Aluminum distearate	0.2
(10) Titanium dioxide treated for hydrophobicity*	5.0
(11) Sericite treated for hydrophobicity*	2.0
(12) Talc treated for hydrophobicity*	3.0
(13) Iron oxide red treated for hydrophobicity*	0.4
(14) Iron oxide yellow treated for hydrophobicity*	0.7
(15) Iron oxide black treated for hydrophobicity*	0.1
(16) Magnesium sulfate	0.7
(17) Glycerin	3.0
(18) Antiseptic	q.s.
(19) Perfume	q.s.
(20) Purified water	Balance

KF6015 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.5)

* Hydrophobic powder: powder was treated with 2%, based on the powder, of stearic acid.

(Preparation Method)

A: Components (1) - (9) were mixed while heating and Components (10) - (15) were added to obtain a homogeneous mixture.

B: Components (16) - (18) and Component (20) were dissolved by heating.

C. While stirring, B was gradually added to A to emulsify and, after cooling, Component (19) was added to obtain a foundation.

The foundation thus obtained had a low viscosity, a fine texture, good spreadability to give moisturized and refreshing feel. It was durable and stable with no change with temperature or time.

[0074]

Example 15: Foundation

(Components)	(%)
(1) Volatile silicone (1)	15.0
(2) Methyltrimethicone	3.0
(3) KF56	5.0
(4) Sorbitan monoisostearate	0.5
(5) Diglyceryl monoisostearate	0.5
(6) KF6012	1.0
(7) Octyl paramethoxycinnamate	3.0
(8) Titanium oxide	10.0
(9) Iron oxide red	0.13
(10) Iron oxide yellow	0.3
(11) Iron oxide black	0.07
(12) Talc	2.5
(13) Sorbitol	2.0
(14) Magnesium sulfate	0.1
(15) Ethanol	10.0
(16) Antiseptic	q.s.
(17) Perfume	q.s.
(18) Purified water	Balance

KF56 (produced by Shin-Etsu Chemical Co., Ltd.):

Methylphenylpolysiloxane

KF6012 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer
(HLB = 7.0)

(Preparation Method)

A: Components (8) - (12) were mixed homogeneously.

B: Components (1) - (7) and Component (16) were mixed while heating and A was added to obtain a homogeneous dispersion.

C. Components (13) - (14) and Component (18) were heated and added to B to emulsify and, after cooling, Components (15) and (17) were added to obtain a foundation.

The foundation thus obtained was non-sticky, and had a fine texture, good spreadability to give cool feel. It was in an excellent emulsified state. It was hardly affected by temperature; it was not changed with time; it was found to be very stable, showing no phase separation or agglomeration.

[0075]

Example 16: Foundation

(Components)	(%)
(1) Volatile silicone (1)	1.0
(2) methyltrimethicone	14.0
(3) KF96A-6	5.0
(4) Liquid paraffin	3.0
(5) KF6015	3.0
(6) Palmitic acid	0.5
(7) Aerosil RY20	5.0
(8) Titanium dioxide	6.0
(9) Iron oxide red	0.25
(10) Iron oxide yellow	0.6
(11) Iron oxide black	0.12
(12) Sericite	8.03
(13) Dipropylene glycol	10.0
(14) Magnesium sulfate	2.0

(15) Antiseptic	q.s.
(16) Antioxidant	q.s.
(17) Perfume	q.s.
(18) Purified water	Balance

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

KF6015 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.5)

Aerosil RY200 (produced by Nippon Aerosil Co., Ltd.):

Hydrophobic silica

(Preparation Method)

A: Components (7) - (12) were mixed homogeneously.

B: Components (1) - (6) and Component (16) were mixed and heated to 70°C under stirring, to which A was added to obtain a homogeneous dispersion.

C. Components (13) - (15) and (18) were heated to 70°C and added to B to emulsify and, after cooling, Component (17) was added to obtain a foundation.

The foundation thus obtained was non-sticky and had a good spreadability to give refreshing and cool feel. It was in an excellent emulsified state. The applied foundation stayed long.

The foundation was hardly affected by temperature to be very stable.

[0076]

Example 17: Foundation

(Components)	(%)
(1) Volatile silicone (1)	6.0
(2) Volatile silicone (2)	3.0
(3) Decamethylcyclopentasiloxane	3.0
(4) Methyltrimethicone	3.0
(5) KF96A-6	8.0
(6) Octyl paramethoxycinnamate	3.0
(7) 12-hydroxystearic acid	1.0

(8) FL-100	15.0
(9) FPD-6131	5.0
(10) KMP590	3.0
(11) Fine particle titanium dioxide treated with a fluorine compound*	8.0
(12) mica titanium treated with a fluorine compound*	1.0
(13) Titanium dioxide treated with a fluorine compound*	5.0
(14) Iron oxide red treated with a fluorine compound*	0.9
(15) Iron oxide yellow treated with a fluorine compound*	2.0
(16) Iron oxide black treated with a fluorine compound*	1.0
(17) Ethanol	15.0
(18) Glycerin	3.0
(19) Magnesium sulfate	1.0
(20) Antiseptic	q.s.
(21) Perfume	q.s.
(22) Purified water	Balance

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

FL-100 (produced by Shin-Etsu Chemical Co., Ltd.):

Trifluoropropylmethylsilicone

FPD-6131 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/trifluoropropyl/methylpolysiloxane copolymer

(HLB = 5.4)

KMP590 (produced by Shin-Etsu Chemical Co., Ltd.):

Spherical silicone resin powder

* Treatment with a fluorine compound: coated with 5% of perfluoroalkylethylphosphate diethanolamine salt

(Preparation Method)

A: Components (10) - (16) were mixed homogeneously.

B: Components (1) - (9) were mixed while heating to 70°C and A was added to obtain a homogeneous dispersion.

C. Components (17) - (20) and Component (22) were heated to 40°C and gradually added to B to emulsify. After cooling, Component (21) was added to obtain a liquid foundation.

The foundation thus obtained was non-sticky and had a good spreadability to give cool feel. It was found to be very stable, showing no change with temperature or time.

[0077]

Example 18: Foundation

(Components)	(%)
(1) Volatile silicone (1)	20.0
(2) Methyltrimethicone	7.0
(3) KF56	3.0
(4) Glyceryl triisooctanoate	10.0
(5) KF6017	1.0
(6) KF6026	1.0
(7) Polyglyceryl monoisostearate	3.0
(8) Powder mixture treated for hydrophobicity*	18.0
(9) Iron oxide red	1.2
(10) Iron oxide yellow	2.6
(11) Iron oxide black	0.2
(12) 1,3-butylene glycol	7.0
(13) Sodium chloride	0.5
(14) Antiseptic	q.s.
(15) Perfume	q.s.
(16) Purified water	Balance

*:Powder mixture treated for hydrophobicity

a. Fine particle titanium dioxide	8.0
b. Fine particle zinc oxide	4.0
c. Talc	3.0
d. Mica	3.0

KF56 (produced by Shin-Etsu Chemical Co., Ltd.):

Methylphenylpolysiloxane

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer (HLB = 4.7)

(Preparation Method)

A: Components a - d were mixed.

B: Components (1) - (7) were mixed and dissolved by heating and Components (8) - (11) were homogeneously dispersed.

C. Components (12) - (14) and Component (16) were mixed and then added to B to emulsify.

D. After cooling C, Component (15) was added to obtain a foundation.

The foundation thus obtained was non-sticky and had a good spreadability. It stuck to the skin to give glossy finish which stayed long. No change was found with temperature change or with time, showing superior stability.

[0078]

Example 19: Hair Cream

(Components)	(%)
(1) Volatile silicone (1)	9.0
(2) Methyltrimethicone	1.0
(3) KF56	4.0
(4) Squalane	5.0
(5) Silicone resin	1.0
(6) Glyceryl dioleate	2.0
(7) KF6017	2.0
(8) KF6026	4.0
(9) Sodium sorbitol sulfate	2.0
(10) Sodium chondroitin sulfate	1.0
(11) Sodium hyaluronate	0.5
(12) Propylene glycol	3.0
(13) Antiseptic	1.5
(14) Vitamin E acetate	0.1
(15) Antioxidant	q.s.
(16) Perfume	q.s.
(17) Purified water	Balance

KF56 (produced by Shin-Etsu Chemical Co., Ltd.):

Methylphenylpolysiloxane

Silicone resin: 50% solution, in M3T, of a silicone network compound (trimethylsiloxy silicate) with a ratio, $[\text{Me}_3\text{SiO}_{1/2}]/[\text{SiO}_2]$, of 0.8

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer (HLB = 4.7)

(Preparation Method)

A: Components (1) - (8) and Components (13) and (14) were mixed while heating.

B: Components (9) - (12) and Component (17) were mixed to be dissolved.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (16) was added to obtain a hair cream.

The hair cream thus obtained had a good spreadability to give moisturized and refreshing feel. It was water-resistant, water-repellent, and sweat-resistant. It was durable and did not change with temperature or time.

[0079]

Example 20: Mascara

(Components)	(%)
(1) KP545	20.0
(2) Dextrin palmitate/ ethylhexanoate	8.0
(3) Polyethylene wax	4.0
(4) Beeswax	7.0
(5) Lecithin	0.5
(6) Methyltrimethicone	balance
(7) Volatile silicone (2)	5.0
(8) Isododecane	20.0
(9) Iron oxide	5.0
(10) AerosilRY200	3.5
(11) Talc	10.0

KP545 (produced by Shin-Etsu Chemical Co., Ltd.):

Acryl silicone copolymer resin/decamethylcyclopentadiloxane 30% solution

AerosilRY200: (Nippon Aerosil Co., Ltd.) Hydrophobic silica

(Preparation Method)

A: Components (1) - (8) were mixed to be dissolved.
B: Components (9) - (11) were added to A and dispersed with a roller.

The mascara thus obtained was found to have a good spreadability and be non-sticky, water-resistant, water-repellent, and sweat-resistant. It was durable and did not change with temperature or time to be very stable.

[0080]

Example 21: Skin Cream

A mixed solution of methyltrimethicone and the volatile silicone (1) in a ratio of 1:1 was used.

(Components)	(%)
(1) The mixed solution	20.0
(2) Glyceryl trioctanoate	10.0
(3) KF6017	1.5
(4) KF6026	4.0
(5) Phenyltrimethicone ammonium chloride	1.0
(6) 1,3-butylene glycol	10.0
(7) Maltitol	10.0
(8) Saponite	1.5
(9) Antiseptic	q.s.
(10) Perfume	q.s.
(12) Purified water	Balance

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/
polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer
(HLB = 4.7)

(Preparation Method)

A: Components (1) - (5) and (9) were mixed while heating.

B: Components (6) - (8) and Component (11) were dissolved by heating.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (10) was added to obtain a cream.

The cream thus obtained was found to have a good spreadability to give moisturized and refreshing feel. It had a good water-resistance and water-repellency and durability. It did not change with temperature or time to be very stable.

[0081]

Example 22: Skin Cream

A mixed solution of methyltrimethicone and the volatile silicone (1) in a ratio of 1:1 was used.

(Components)	(%)
(1) The mixed solution	10.0
(2) KF96A-6	5.0
(3) Liquid paraffin	5.0
(4) Aqueous dispersion of silicone elastomer spherical powder	2.0
(5) KF6017	3.0
(6) KF6026	5.0
(7) Sodium citrate	2.0
(8) 1,3-butylene glycol	5.0
(9) Antiseptic	q.s.
(10) Perfume	q.s.
(11) Purified water	Balance

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/
polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer
(HLB = 4.7)

(Preparation Method)

A: Components (1) - (5) were mixed while heating.

B: Components (6) - (9) and Component (11) were dissolved by heating.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (10) was added to obtain a cream.

The cream thus obtained was soft and spread well to give appropriate moisturizing and refreshing feel. It was water-resistant and water-repellent and stayed long. No change was found with temperature change or with time, showing good stability.

[0082]

Example 23: Skin Cream

A mixed solution of methyltrimethicone and the volatile silicone (1) in a ratio of 1:1 was used.

(Components)	(%)
(1) The mixed solution	20.0
(2) Liquid paraffin	5.0
(3) KF615A	1.0
(4) Magnesium L-ascorbate phosphate	3.0
(5) Dipropylene glycol	5.0
(6) Glycerin	5.0
(7) Antiseptic	q.s.
(8) Perfume	q.s.
(9) Purified water	Balance

KF615A (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer
(HLB = 14.0)

(Preparation Method)

A: Components (1) - (3) were mixed homogeneously.

B: Components (5) - (7) were heated to obtain a homogeneous mixture.

C: Components (4) and (9) were dissolved homogeneously.

D: While stirring, B was gradually added to A, and C was further added to emulsify. Then, Component (8) was added to obtain a cream.

The cream thus obtained had a fine texture and good spreadability to give appropriate moisturizing and refreshing feel. It also had good affinity for the skin and an excellent whitening effect. It was found to be stable, showing no change with temperature or time.

[0083]

Example 24: Skin Cream

A mixed solution of methyltrimethicone and the volatile silicone (2) in a ratio of 7:3 was used.

(Components)	(%)
(1) The mixed slution	20.0
(2) KF56	5.0
(3) KF6012	1.5
(4) Dextrin fatty acid ester	1.0
(5) Glycerin	5.0
(6) Sodium chloride	1.0
(7) Antiseptic	q.s.
(8) Perfume	q.s.
(9) Purified water	Balance

KF56 (produced by Shin-Etsu Chemical Co., Ltd.):

Methylphenylpolysiloxane

KF6012 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer

(HLB = 7.0)

(Preparation Method)

A: Components (1) - (4) were mixed while heating.

B: Components (5) - (7) and Component (9) were dissolved by heating.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (8) was added to obtain a cream.

The cream thus obtained had a fine texture and good spreadability to give moisturizing feel. It was non-sticky to have good usability. It was resistant to water and sweat, and was durable. No change was found with temperature change or with time, showing good stability.

[0084]

Example 25: Skin Cream

(Components)	(%)
(1) Volatile silicone (1)	8.0
(2) Methyltrimethicone	10.0
(3) KF96A-100	2.0
(4) Polypropylene glycol (3) myristylether	0.5
(5) KF6017	1.4
(6) KF6026	2.5
(7) Fine particle titanium dioxide treated for hydrophobicity*	1.0
(8) Glycerin	3.0
(9) 70% sorbitol	5.0
(10) Citric acid	25.0
(11) Sodium chloride	0.6
(12) Antiseptic	q.s.
(13) Perfume	q.s.
(14) 32% aqueous ammonia	4.5
(15) Purified water	Balance

KF96A-100 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 100 mm²/s

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/

polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer
(HLB = 4.7)

*:Fine particle titanium dioxide treated with aluminum stearate
(Preparation Method)

A: Components (1) - (6) and (13) were mixed, and then
Component (7) was mixed by stirring.

B: Components (8) - (12) and Components (14) - (15) were
dissolved homogeneously.

C: B was gradually added to A to emulsify to obtain a cream.

The cream thus obtained spread well and was non-sticky in
spite of a relatively large content of citric acid. No change
was found with temperature change or with time, showing good
stability.

[0085]

Example 26: Skin Cream

(Components)	(%)
(1) Volatile silicone (1)	10.0
(2) Methyltrimethicone	6.0
(3) KF96A-6	4.0
(4) KF6012	5.0
(5) POE(5) octyldodecyl ether	1.0
(6) Polyoxyethylene sorbitan monostearate (20E.O.)	0.5
(7) SUNSPHERE SZ-5	4.0
(8) Silicone-treated fine particle titanium dioxide	5.0
(9) Liquid paraffin	2.0
(10) Macademian nut oil	1.0
(11) Scutellaria Root Extract*	1.0
(12) Gentiana Extract**	0.5
(13) Ethanol	5.0
(14) 1,3-butylene glycol	2.0
(15) Antiseptic	q.s.
(16) Perfume	q.s.
(17) Purified water	Balance

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

KF6012 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer
(HLB = 7.0)

SUNSPHERE SZ-5 (Produced by Asahi Glass Company): Silica with a particle size ranging from 0.01 to 10µm, encapsulating 50% of anhydrous silicic acid-treated zinc oxide

* Scutellaria Root Extract: extracted with a 50% aqueous 1,3-butylene glycol solution

** Gentiana Extract: extracted with a 20% aqueous ethanol solution

(Preparation Method)

A: Components (7) - (10) were mixed to be dispersed homogeneously.

B: Components (1) - (6) were mixed and A was added thereto.

C: Components (11) - (15) and Component (17) were mixed, to which B was added to emulsify.

D: After cooling C, Component (16) was added to obtain a cream.

The cream thus obtained was non-sticky and spread well. It stuck well to the skin and gave glossy finish which stayed long. No change was found with temperature change or with time, showing good stability.

[0086]

Example 27: Hand cream

(Components)	(%)
(1) Volatile silicone (1)	1.0
(2) Methyltrimethicone	11.0
(3) α-olefin oligomer	10.0
(4) Silicone resin	5.0
(5) KF6017	1.9
(6) KF6026	4.0
(7) Distearyldimethyl ammonium chloride	0.8

(8) Vitamin E acetate	0.1
(9) Polyethylene glycol 4000	1.0
(10) Glycerin	10.0
(11) Smectite	1.2
(12) Antiseptic	q.s.
(13) Perfume	q.s.
(14) Purified water	Balance

Silicone resin: 70% solution, in M3T, of a silicone network compound (trimethylsiloxy silicate) with a ratio, $[\text{Me}_3\text{SiO}_{1/2}]/[\text{SiO}_2]$, of 1.15

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/polyoxypropyleneoleylmethyl siloxane/dimethylsiloxane copolymer (HLB = 4.7)

(Preparation Method)

A: Components (1) - (8) and Component (12) were mixed while heating.

B: Components (9) - (11) and Component (14) were mixed under heating to be dissolved.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (13) was added to obtain a hand cream.

The hand cream thus obtained spread well to give appropriate moisturizing and refreshing feel. It had good water-resistance and water-repellency. It was found to be stable, showing no change with time and temperature.

[0087]

Example 28: Hand cream

A mixed solution of methyltrimethicone and the volatile silicone (1) in a ratio of 7:3 was used.

(Components)	(%)
(1) The mixed solution	30.0
(2) Liquid paraffin	10.0
(3) Amino-modified silicone gum	15.0
(4) KF6017	4.0
(5) Distearyldimethyl ammonium chloride	0.8
(6) Vitamin E acetate	0.1
(7) Polyethylene glycol 4000	1.0
(8) Glycerin	10.0
(9) Smectite	1.2
(10) Antiseptic	q.s.
(11) Perfume	q.s.
(12) Purified water	Balance

Amino-modified silicone gum: Amine equivalence of 70000 g/mol

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

(Preparation Method)

A: Components (1) and (3) were heated and mixed to be dissolved, and then Components (2), (4) - (6) and (10) were added while heating.

B: Components (7) - (9) and Component (12) were mixed while heating.

C: B was gradually added to A to emulsify and, after cooling, Component (11) was added to obtain a hand cream.

The hand cream thus obtained was non-sticky and spread well to give refreshing feel. It effectively protects hand from wet work. It was found to be stable with no change with temperature or time.

[0088]

Example 29: Hand cream (O/W)

(Components)	(%)
(1) KP545	5.0
(2) Volatile silicone (1)	4.5
(3) Methyltrimethicone	0.5
(4) KSG16	2.5
(5) α -olefin oligomer	5.0

(6) Vaseline	5.0
(7) Glyceryl triisooctanoate	3.0
(8) KF6017	0.5
(9) Polyoxyethylene sorbitan monooleate	1.0
(10) Sepigel 305	2.0
(11) 1,3-butylene glycol	5.0
(12) Glycerin	5.0
(13) Antiseptic	q.s.
(14) Perfume	q.s.
(15) Purified water	Balance

KP545 (produced by Shin-Etsu Chemical Co., Ltd.):

30% solution of acrylic silicone copolymer
resin/decamethylcyclopentasiloxane

KSG16 (produced by Shin-Etsu Chemical Co., Ltd.):

Crosslinked dimethylpolysiloxane/dimethylpolysiloxane

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

Sepigel 305: Light liquid paraffin (produced by SEPPIC Inc.)

(Preparation Method)

A: Components (1) - (8) were mixed homogeneously.

B: Components (9) - (12) and Component (14) were mixed
homogeneously.

C: B was added to A to emulsify and Component (13) was
added to obtain an O/W hand cream.

The hand cream thus obtained was non-sticky and spread well.
It has good affinity for the skin to form a glossy finish which
lasted long. It was found to be stable, showing no change with
temperature or time.

[0089]

Example 30: Hand cream (O/W)

(Components)	(%)
(1) KP545	5.0
(2) Volatile silicone (2)	2.5
(3) Methyltrimethicone	2.5
(4) KP561	8.0

(5) Cetanol	1.0
(6) Glyceryl triisostearate	5.0
(7) Stearic acid	3.0
(8) Glyceryl monostearate	1.5
(9) KF6015	0.7
(10) Sorbitan sesquioleate	0.5
(11) Polyoxyethylene sorbitan monooleate	1.0
(12) Sodium hydroxide (1% aqueous solution)	10.0
(13) 1,3-butylene glycol	5.0
(14) Antiseptic	q.s.
(15) Perfume	q.s.
(16) Purified water	Balance

KP545 (produced by Shin-Etsu Chemical Co., Ltd.):

30% solution of acrylic silicone copolymer resin/
decamethylcyclopentasiloxane

KF6015 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.5)

KP561 (produced by Shin-Etsu Chemical Co., Ltd.):

Acrylic silicone copolymer resin: stearyl-modified acrylate
silicone

(Preparation Method)

A: Components (1) - (10) were mixed and dissolved by
heating.

B: Components (11) - (13) and Component (15) were mixed and
heated.

C: B was added to A to emulsify and Component (14) was
added to obtain an O/W hand cream.

The hand cream thus obtained stuck to the skin very well and
stayed long. No change was found with temperature change or
with time, showing good stability.

[0090]

Example 31: Moisturizing Cream

(Components)	(%)
(1) Volatile silicone (1)	5.0

(2) Methyltrimethicone	5.0
(3) KF56	3.0
(4) Liquid paraffin	5.0
(5) Pentaerythritol tetra-2-ethylhexanoate	3.0
(6) Cetyl 2-ethylhexanoate	5.0
(7) KF6017	1.0
(8) KMP594	2.5
(9) Aerosil R972	2.0
(10) Zinc stearate	2.0
(11) Vitamin E acetate	3.0
(12) Polyoxyethylene glycol 400	1.0
(13) Sodium lactate	1.0
(14) 1,3-butylene glycol	5.0
(15) Antiseptic	q.s.
(16) Perfume	q.s.
(17) Purified water	Balance

KF56 (produced by Shin-Etsu Chemical Co., Ltd.):

Methylphenylpolysiloxane

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KMP594 (produced by Shin-Etsu Chemical Co., Ltd.):

Spherical silicone elastomer resin powder

Aerosil R972 (produced by Nippon Aerosil Corp.): Hydrophobic silica

(Preparation Method)

A: Components (1) - (7) and Components (10) - (11) were mixed homogeneously and Components (8) - (9) were dispersed homogeneously.

B: Components (12) - (15) and Component (17) were added to be dissolved.

C: B was gradually added to A to emulsify and after cooling, Component (16) was added to obtain a moisturizing cream.

The moisturizing cream thus obtained spread well to give moisturizing and refreshing feel. It was non-sticky. It did not change with temperature or time to be excellent in stability as

well as usability.

[0091]

Example 32: Aftershave Cream

(Components)	(%)
(1) Methyltrimethicone	30.0
(2) Volatile silicone (2)	5.0
(3) KF6017	2.9
(4) KF6026	5.0
(5) Polyethylene glycol (molecular weight: 400)	5.0
(6) Sodium L-glutamate	2.0
(7) Arantoin	0.1
(8) Aloe extract	q.s.
(9) Antiseptic	q.s.
(10) Antioxidant	q.s.
(11) Perfume	q.s.
(12) Purified water	Balance

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/

polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer

(HLB = 4.7)

(Preparation Method)

A: Components (1) - (4) were mixed while heating.

B: Components (5) - (10) and (12) were mixed while heating.

C: B was gradually added to A to emulsify and, after cooling, Component (11) was added to obtain an aftershave cream.

The aftershave cream thus obtained had a high viscosity and did not sag. It spread well during application. It was non-sticky to kept moisturizing feel after applied. It was very stable.

[0092]

Example 33: Eye Wrinkle Cream

(Components)	(%)
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(1) Volatile silicone (1)	3.0
(2) Methyltrimethicone	17.0
(3) KF7312J	5.0
(4) KF6017	2.0
(5) KF6026	5.0
(6) Sodium chondroitin sulfate	2.0
(7) Sodium lactate	1.0
(8) Glycerin	50.0
(9) Antiseptic	q.s.
(10) Antioxidant	q.s.
(11) Perfume	q.s.
(12) Purified water	Balance

KF7312J (produced by Shin-Etsu Chemical Co., Ltd.):

Silicone resin: 50% solution, in decamethylcyclopentasiloxane, of a silicone network compound (trimethylsiloxy silicate) with a ratio, $[\text{Me}_3\text{SiO}_{1/2}]/[\text{SiO}_2]$, of 0.8

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/

polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer (HLB = 4.7)

(Preparation Method)

A: Components (1) - (5) and Component (10) were mixed while heating.

B: Components (6) - (9) and Component (12) were dissolved by heating.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (11) was added to obtain an eye wrinkle cream.

The eye wrinkle cream thus obtained spread well to give moisturizing and refreshing feel. It was durable and did not change with temperature or time to be very stable.

[0093]

Example 34: Eye Shadow

(Components)	(%)
(1) Volatile silicone (1)	12.0
(2) Methyltrimethicone	3.0
(3) KF96A-6	10.0
(4) KF6012	2.0
(5) PEG(10) lauryl ether	0.5
(6) LL-treated chromium oxide**	6.2
(7) Silicone-treated ultramarine blue*	4.0
(8) LL-treated titanium-coated mica**	6.0
(9) Sodium chloride	2.0
(10) Propylene glycol	8.0
(11) Antiseptic	q.s.
(12) Perfume	q.s.
(13) Purified water	Balance

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

KF6012 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer

(HLB = 7.0)

* Silicone treatment: 3%, based on the powder, of methylhydrogenpolysiloxane was added to the powder, followed by heat treatment.

** LL treatment: Coating treatment with 5%, based on the powder, of N ε-lauroyl-L-lysine (Amihope LL, produced by Ajinomoto Co., Inc.)

(Preparation Method)

A: Components (1) - (5) were mixed, to which Component (6) - (8) were added and dispersed homogeneously.

B: Components (9) - (11) and Component (13) were dissolved homogeneously.

C: While stirring, B was gradually added to A to emulsify and Component (12) was added to obtain an eye shadow.

The eye shadow thus obtained spread well. It was non-greasy and non-powdery and gave a moisturizing and refreshing feel. It had good water-resistance, water-repellency and sweat-resistance. It was durable and stable with no change with temperature change time.

[0094]

Example 35: Eyeliner

(Components)	(%)
(1) Volatile silicone (1)	5.0
(2) Methyltrimethicone	17.0
(3) KF96A-6	5.0
(4) Jojoba oil	2.0
(5) KF6017	1.0
(6) Silicone-treated iron oxide black (Note)	20.0
(7) Ethanol	5.0
(8) Antiseptic	q.s.
(9) Purified water	Balance

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

(Note) Silicone-treated Iron oxide black: 2% of methylhydrogenpolysiloxane was added to iron oxide black, followed by heat treatment.

(Preparation Method)

A: Components (1) - (5) were mixed while heating, to which Component (6) was added to be dispersed homogeneously.

B: Components (7) - (9) were dissolved by heating.

C: While stirring, B was gradually added to A to emulsify to obtain an eyeliner.

The eyeliner thus obtained spread well. It was non-greasy and non-powdery to give moisturizing and refreshing feel. It had good water-resistance, water-repellency and sweat-resistance

and was durable. It was found to be stable with no change with temperature or time.

[0095]

Example 36: Eyeliner

(Components)	(%)
(1) Volatile silicone (2)	6.0
(2) Methyltrimethicone	16.0
(3) KF96A-6	5.0
(4) Silicone-treated iron oxide black	20.0
(5) Vitamin E acetate	0.2
(6) Jojoba oil	2.0
(7) Bentonite	3.0
(8) KF6012	2.0
(9) Ethanol	10.0
(10) 1,3-butylenle glycol	10.0
(11) Antiseptic	q.s.
(12) Perfume	q.s.
(13) Purified water	Balance

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

KF6012 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer

(HLB = 7.0)

(Preparation Method)

A: Components (1) - (3), (5) - (8) were mixed, to which Component (4) was added to be dispersed homogeneously.

B: Components (9) - (11) and Component (13) were mixed.

C: B was gradually added to A to emulsify and, after cooling, Component (12) was added to obtain an eyeliner.

The eyeliner thus obtained gave a glossy finish which stayed long and was durable. No change was found with temperature change or with time, showing good stability.

The eyeliner thus obtained spread well and easy to draw. It gave refreshing feel. It had good water-resistance, water-repellency and sweat-resistance and was durable. It was found to be stable with no change with temperature or time.

[0096]

Example 37: Antiperspirant

(Components)	(%)
(1) Methyltrimethicone	26.0
(2) Volatile silicone (2)	4.0
(3) KF6026	1.0
(4) Polyoxyethylenesorbitan monooleate (20 E.O.)	0.5
(5) Aluminum zirconium tetrachlorohydrate glycine salt	20.0
(6) Purified water	Balance

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/polyoxypropyleneoleylmethylsiloxane/dimethylsiloxane copolymer (HLB = 4.7)

(Preparation Method)

A: Components (1) and (2) were mixed.

B: Component (4) was dissolved in Component (5), and Component (3) was added.

C: While stirring, B was gradually added to A to emulsify to obtain an antiperspirant.

The antiperspirant thus obtained spread well and was non-sticky. It did not whiten very much and gave refreshing feel. It was found to be stable with no change with temperature or time.

[0097]

Example 38: Antiperspirant

(Components)	(%)
(1) KSG-21	20.0
(2) KSG-15	20.0
(3) Volatile silicone (1)	10.0

(4) Methyltrimethicone	20.0
(5) Aluminum zirconium tetrachlorohydrate [Aluminum Zirconium Tetrachlorohydrex GLY]	20.0
(6) KF-96A-6	10.0

KSG21 (produced by Shin-Etsu Chemical Co., Ltd.):

Crosslinked polyether-modified

methylpolysiloxane/dimethylpolysiloxane

KSG15 (produced by Shin-Etsu Chemical Co., Ltd.):

Crosslinked polyether-modified

methylpolysiloxane/decamethylcyclopentasiloxane

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

(Preparation Method)

A: Components (1) - (4) and Component (6) were mixed homogeneously.

B: Component (5) was added to A and dispersed by mixing.

The antiperspirant thus obtained was non-tacky, and spread well.

It showed good stability with no change with temperature or time.

[0098]

Example 39: Transparent Gel Cosmetic

(Components)	(%)
(1) Volatile silicone (1)	6.0
(2) Methyltrimethicone	4.0
(3) KF615A	10.0
(4) 1,3-butylene glycol	10.0
(5) Polyethylene glycol 400	9.0
(6) 2-hydroxyoctanoic acid	1.0
(7) Sorbitol (70% aqueous solution)	10.0
(8) Citric acid	q.s.
(9) Sodium citrate	q.s.
(10) Antiseptic	q.s.
(11) Perfume	q.s.
(12) Purified water	Balance

KF615A (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer
(HLB = 14.0)

(Preparation Method)

A: Components (4) - (12) were dissolved homogeneously.

B: Components (1) - (3) were mixed to obtain a homogeneous mixture.

C: While stirring, A was gradually added to B to emulsify to obtain a transparent gel cosmetic.

The transparent gel cosmetic thus obtained spread well to give moisturizing and refreshing feel. It had affinity for the skin and showed good stability with no change with temperature or time.

[0099]

Example 40: Milky Lotion

(Components)	(%)
(1) Volatile silicone (1)	13.0
(2) Methyltrimethicone	5.0
(3) KF96A-6	6.0
(4) Squalan	5.0
(5) Neopentylglycol dioctanoate	3.0
(6) α -monooleylglyceryl ether	1.0
(7) KF6017	2.0
(8) Aluminum distearate	0.2
(9) Magnesium sulfate	0.7
(10) Glycerin	5.0
(11) Antiseptic	q.s.
(12) Perfume	q.s.
(13) Purified water	Balance

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

(Preparation Method)

A: Components (1) - (8) were mixed while heating.

B: Components (9) - (11) and Component (13) were dissolved while heating.

C: While stirring, B was gradually added to A and, after cooling, Component (12) was added to obtain a milky lotion.

The milky lotion thus obtained had a low viscosity and fine texture. It spread well and gave a moisturizing and refreshing feel. It was durable and stable with no change with temperature or time.

[0100]

Example 41: Milky Lotion

(Components)	(%)
(1) Volatile silicone (2)	11.0
(2) Methyltrimethicone	4.0
(3) KF96A-6	6.0
(4) Squalan	5.0
(5) Neopentylglycol dioctanoate	3.0
(6) α -monooleylglyceryl ether	1.0
(7) KF6026	1.5
(8) KF6017	1.0
(9) Aluminum distearate	0.2
(10) Dextrin fatty acid ester	1.0
(11) Magnesium sulfate	0.7
(12) Glycerin	5.0
(13) Antiseptic	q.s.
(14) Perfume	q.s.
(14) Purified water	Balance

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

KF6026 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylenemethylsiloxane/polyoxypropyleneoleylmethyl siloxane/dimethylsiloxane copolymer (HLB = 4.7)

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

(Preparation Method)

A: Components (1) - (10) were mixed while heating.

B: Components (11)- (13) and Component (15) were dissolved while heating.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (14) was added to obtain a milky lotion.

The milky lotion thus obtained had a low viscosity and fine texture. It spread well and gave a moisturizing and refreshing feel. It was durable and stable with no change with temperature or time.

[0101]

Example 42: Milky Lotion

(Components)	(%)
(1) Methyltrimethicone	10.0
(2) Volatile silicone (1)	5.0
(3) KF56	5.0
(4) Squalane	5.0
(5) Pentaneerythritol tetra-2-ethylhexanoate	5.0
(6) KF6017	3.0
(7) KMP594	2.0
(8) Aerosil R972	0.5
(9) Magnesium ascorbate phosphate	1.0
(10) Sodium chloride	1.0
(11) Polyethylene glycol 11000	1.0
(12) Propylene glycol	8.0
(13) Antiseptic	q.s.
(14) Perfume	q.s.
(15) Purified water	Balance

KF56 (produced by Shin-Etsu Chemical Co., Ltd.):

Methylphenylpolysiloxane

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KMP594 (produced by Shin-Etsu Chemical Co., Ltd.):

Spherical silicone elastomer resin powder

Aerosil R972 (produced by Nippon Aerosil Co., Ltd.):

Hydrophobic silica

(Preparation Method)

A: Components (1) - (5) were mixed homogeneously, to which Components (6) and (7) were added to disperse homogeneously.

B: Components (8) - (10) were added to Component (14) to be dissolved. Components (11) and (12) were mixed with each other homogeneously and added to the solution.

C: B was gradually added to A to emulsify and, after cooling, Component (13) was added to obtain a milky lotion.

The milky lotion thus obtained spread well and was non-tacky. It was found to be stable with no change with temperature or time.

[0102]

Example 43: Beautifying Liquid

A mixed solution of methyltrimethicone and the volatile silicone (1) in a 1:1 ratio was used.

(Components)	(%)
(1) The mixed solution	12.0
(2) Glyceryl triisooctanoate	10.0
(3) KF6017	2.0
(4) KSG21	0.2
(5) Glycerin	10.0
(6) Magnesium ascorbate phosphate	3.0
(7) Sodium chloride	2.0
(8) Antiseptic	q.s.
(9) Perfume	q.s.
(10) Purified water	Balance

KF6017 (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/methylpolysiloxane copolymer (HLB = 4.6)

KSG21 (produced by Shin-Etsu Chemical Co., Ltd.):

Crosslinked polyether-modified
methylpolysiloxane/dimethylpolysiloxane

(Preparation Method)

A: Components (1) - (4) were mixed while heating.

B: Components (5) - (8) and Component (10) were heated to be dissolved homogeneously.

C: While stirring, B was gradually added to A to emulsify and, after cooling, Component (9) was added to obtain a beautifying liquid.

The beautifying liquid thus obtained had a fine texture and spread well. It gave moisturizing feel and was stable with no change with temperature or time.

[0103]

Example 44: Deodorant

(Components)	(%)
(1) Volatile silicone (1)	3.0
(2) Methyltrimethicone	9.0
(3) KF96A-6	4.0
(4) KF615A	1.0
(5) Propylene glycol	31.0
(6) Triclosan	0.1
(7) Glycerin	15.0
(8) Antiseptic	q.s.
(9) Perfume	q.s.
(10) Purified water	Balance

KF96A-6 (produced by Shin-Etsu Chemical Co., Ltd.):

Dimethylpolysiloxane with a viscosity of 6 mm²/s

KF615A (produced by Shin-Etsu Chemical Co., Ltd.):

Polyoxyethylene/polyoxypropylene/methylpolysiloxane copolymer

(HLB = 14.0)

(Preparation Method)

A: Components (1) - (4) were mixed.

B: Components (6) was dissolved in Component (5), and then Components (7) - (10) were mixed.

C: B was added to A to emulsify while vigorous stirring.

D: 65 parts of C and 35 parts of a propellant (mixture of n-butane, isobutene, and propane) were put in an aerosol can to obtain a deodorant.

The deodorant thus obtained did not droop when used in a high concentration. It was non-tacky and maintained effects.

[0104]

Example 45: Aerosol Composition (astringent-deodorant)

(Components)	(%)
(1) Silicone-treated mica	3.0
(2) Chlorohydroxyaluminum	2.0
(3) Isopropylmethylphenol	0.3
(4) Sorbitan sesquioleate	0.2
(5) Isopropylmyristate	5.0
(6) Volatile silicone (1)	5.0
(7) Methyltrimethicone	1.0
(8) Perfume	q.s.
(9) Propellant	Balance

(Preparation Method)

A: Components (1) - (8) were mixed.

B: After putting A in an aerosol can, the can was filled with Component (9).

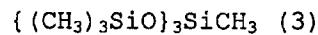
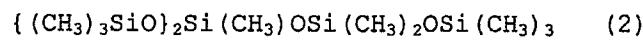
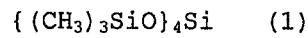
Thus-obtained aerosol composition of the present invention had high deodorizing effect and was not tacky and spread well when applied. It had smooth feel to the touch. Further, it had excellent usability because of good re-dispersibility.

[0105]

[Effects of the invention]

As describe above, It is evident that a cosmetic can be obtained which cosmetic is highly safe and has a good feel to the touch, durability, product stability, good spreadability

with little dry feel and little sensory irritation, by incorporating the compound having the following structure (1) and/or (2), which are highly safe and have appropriate volatility, oil-solubility, stability with time and sensory feels, and methyltrimethicone having the following structure (3).



[Document Name] Abstract

[Abstract]

[Objects] To provide a cosmetic comprising volatile silicones which cosmetic is excellent in safety and have appropriate volatility and oil-solubility, stability with time and excellent feel to the touch.

[Solution Means] A cosmetic comprising a compound having a structure of the following (1) and/or a compound having a structure (2), and methyltrimethicone having a structure of the following (3).

{(CH₃)₃SiO}₄Si (1)

{(CH₃)₃SiO}₂Si(CH₃)OSi(CH₃)₂OSi(CH₃)₃ (2)

{(CH₃)₃SiO}₃SiCH₃ (3)

[Selected Figure] None

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[Reason of Change]	New registration
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